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DRAFT INSTITUTIONAL CONTROLS PROGRAM

FOR THE

SIMPLOT PLANT AREA
EASTERN MICHAUD FLATS SUPERFUND SITE

August 2002

J.R. SIMPLOT COMPANY

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1.0 INTRODUCTION

This document presents the J.R. Simplot Company's draft Institutional Controls Program for the Simplot Plant Area of the Eastern Michaud Flats (EMF) superfund Site located near Pocatello, Idaho. This action is part of the comprehensive Site remedy as described in the Record of Decision (ROD; USEPA, 1998) and subsequent Consent Decree for the Simplot Plant Area (USEPA, 2002).

As set out in the Consent Decree Statement of Work, the Simplot Plant Area Institutional Controls Program contains 5 elements:

- preparation and use of a worker information sheet in annual training and new worker training to inform workers of potential health hazards associated with the Superfund process at the facility,
- providing mitigation measures to control exposure of gypsum stack workers to external gamma radiation,
- identifying areas where gross alpha levels in soils are above the soil screening level and providing a procedure to require any future office buildings in these areas to be constructed using radon-controlling methods and to be monitored annually for radon in indoor air,
- implement legally enforceable land use controls to eliminate the possibility of future residential land use of the Simplot Plant Area.

The draft worker information sheet is provided in Attachment A. the Gamma Radiation Exposure Monitoring/Mitigation Plan for Gypsum Stack Workers is provided in attachment B. Draft land use controls addressing radon issues for future office buildings, preventing use of groundwater as drinking water and preventing future residential land use are provided in Attachment C.

2.0 REFERENCES

USEPA. 1998. *Record of Decision, Declaration Decision Summary and Responsiveness Summary for Eastern Michaud Flats Superfund Site*. Pocatello, Idaho, US EPA Region 10. June 1998.

USEPA. 2002. *Consent Decree for Remedial Design/Remedial Action for the Simplot Plant Area at the Eastern Michaud Flats Superfund Site*. US EPA Region 10. May 9, 2002.

A

ATTACHMENT A

Worker Information Sheet

Information Sheet
Potential Health Hazards Associated with the Superfund Process at the Don Plant

Background

The Don Plant is part of the Eastern Michaud Flats Superfund Site. As part of the Superfund process an extensive environmental investigation of soils, groundwater, surface water and air was performed. This investigation identified contamination at the Don Plant associated with the phosphate ore raw material, and byproducts (primarily the gypsum stack). Based on the results of the investigation EPA estimated human health risks above their acceptable level for certain areas. Simplot subsequently evaluated a range of options to address those health risks and EPA has selected the remedy for the Don Plant. Simplot recently provided EPA with designs of the remedy and expects to begin implementation in the Fall of 2002.

Areas Identified as Posing a Potential Health Hazard and Planned Activities

Groundwater: Groundwater beneath the Don Plant contains contaminants above federal drinking water standards. This water is not currently used as a drinking source at the Don Plant and will not be in the future. Under the Superfund process, Simplot is implementing land use controls to ensure that groundwater will not be used as drinking water in the future.

Dewatering Pit: The Dewatering Pit is small bermed area to the west of the irrigation water equalization pond across Highway 30. The pit contains phosphate ore residuals and solids precipitated by pH adjustment of irrigation waters generated in the early 1990s. EPA estimated that workers that performed activities in the pit an average of 75 days per year for 25 years would have an elevated health risk. No work has been performed in the pit, or is planned, until after it is cleaned up. Simplot expects to clean up the pit by removing the solids and placing them on the gypsum stack in the Fall of 2002.

Gypsum Stack: EPA identified an elevated health risk for gypsum stack workers associated with exposure to gamma radiation from naturally-occuring radionuclides in the phosphate ore that remain in the gypsum after processing in the Don Plant. The measured values are above EPA's level of concern, but less than OSHA limits.

Measured Gamma Radiation Exposure Rates	OSHA Acceptable Limits	Notes
35 mrem per year	1,250 mrem per year – above this value OSHA would require a formal gamma radiation monitoring program.	Measured exposure is 1/35th of the OSHA limit
	5,000 mrem per year Maximum Permissible Dose for workers that should not be exceeded without careful consideration of the reason for doing so.	Measured exposure is less than 1/100th of the OSHA limit.

The Simplot plans to perform monitoring for the gypsum stack workers in the Fall of 2002 and will implement measures to reduce gamma radiation exposure if necessary.

B

ATTACHMENT B

Gamma Radiation Exposure Monitoring/Mitigation Plan for Gypsum Stack Workers

GAMMA RADIATION EXPOSURE MONITORING/ MITIGATION PLAN FOR GYPSUM STACK WORKERS

SIMPLOT PLANT AREA
EASTERN MICHAUD FLATS SUPERFUND SITE

August 1, 2002

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1.0 INTRODUCTION

This document presents J.R. Simplot Company's gamma radiation monitoring and mitigation plan for gypsum stack workers in the Simplot Plant Area of the Eastern Michaud Flats (EMF) Superfund Site located near Pocatello, Idaho. This action is part of the comprehensive Site remedy as described in the Record of Decision (ROD; USEPA, 1998) and subsequent Consent Decree for the Simplot Plant Area (USEPA, 2002).

In order to quantify and control any potential risks to its workers, Simplot is proposing to monitor actual gamma radiation exposures to gypsum stack workers over a three-month period and then to design and implement mitigation measures, if necessary. Worker monitoring will be performed in accordance with standard methods used in measuring radiation levels under programs administered by the Occupational Health and Safety Administration (i.e., 29 CFR 1910) and the U.S. Department of Energy (DOE).

1.1 Site Description And Project History

The EMF Site is located near the City of Pocatello, Idaho and includes two industrial facilities (Figure 1): the FMC Elemental Phosphorus Facility (ceased operations in December 2001) and the J.R. Simplot Don Plant. FMC produced elemental phosphorus. The Don Plant produces phosphoric acid and a variety of liquid and solid fertilizers. The EPA has divided the Site into three areas: the FMC Plant Area includes the FMC facility and adjacent land owned by FMC; the Simplot Plant Area includes the Don Plant and adjacent land owned by Simplot; and the Off-Plant Area surrounds the FMC- and Simplot-Plant Areas.

The Simplot Don Plant covers approximately 745 acres and adjoins the eastern property boundary of the FMC facility. The main portion of the plant lies approximately 500 feet southwest of the Portneuf River. Of the 745 acres, approximately 400 acres are committed to the gypsum stack. Another 185 acres are occupied by the plant and its infrastructure. A significant portion of the remaining acreage to the south and southeast of the plant consists of cliffs and rugged steep terrain. A Union Pacific Railroad right-of-way is adjacent to the northern fence line of the Don Plant and passes through the northern portion of the Simplot Subarea, paralleling U.S. Highway 30. Access to the Don Plant is provided by I-86 and U.S. Highway 30.

The Don Plant began production of a single superphosphate fertilizer in 1944. Phosphoric acid production began in 1954. Currently, the plant produces 12 principal products, including five grades of solid fertilizers and four grades of liquid fertilizers. The principal raw materials for the process are phosphate ore, which is transported to the facility via a slurry pipeline from the Smoky Canyon mine, sulfur, and ammonia. The primary byproduct from the Don Plant process is gypsum (calcium sulfate), which is stacked on site.

An Administrative Order on Consent (AOC) was issued by the U.S. Environmental Protection Agency (EPA) on May 30, 1991 and entered into voluntarily by FMC and Simplot. The AOC specified requirements for implementation of a Remedial Investigation (RI) and Feasibility Study (FS) to evaluate site conditions and remedial alternatives to address any potential threats to human health and the environment. Based on the findings of these studies, EPA issued a Record of Decision (ROD; USEPA, 1998), specifying the selected remedial actions for the Site on June 8, 1998. A Consent Decree (USEPA, 2002) between EPA and Simplot, which specified the conditions for implementing the selected remedial actions in the Simplot Plant Area was entered on May 9, 2002.

1.2 Remedial Action Objectives for Gamma Radiation Exposure Mitigation

The remedy selected in the ROD for the Simplot Plant Area contained the following for gypsum stack workers:

Simplot shall implement a program requiring gypsum stack workers to wear radiation-measuring devices which would allow for characterization of actual exposure and reduction of uncertainties associated with this pathway. If an unacceptable level of exposure is measured for any worker, job rotation of this worker, or other protective measures, shall be initiated. If exposure levels are shown to be consistently below 1 x 10^{-4} risk based level for the first few years, the monitoring may be discontinued upon EPA approval.

The Consent Decree Statement of Work (SOW) contains the following ROD cleanup objective:

Prevent external exposure to radionuclides in soils that pose estimated excess cancer risks greater than 1x10^{-4} or Site-specific background levels where that is not practicable.

1.3 Report Organization

Section 2.0 of this report provides a summary of previous studies and evaluations to provide background information for the proposed monitoring study in terms of data gathered and issues identified in the Superfund project. Details of the proposed monitoring and mitigation plan are provided in Section 3.0 and the schedule and deliverables are described in Section 4.0.

2.0 SUPPORTING INFORMATION

As discussed above, the Simplot Don Plant is part of the EMF Superfund Site. The Superfund evaluation identified potential risks to human and ecological receptors and evaluated and selected remedial actions to address those risks. Potential human receptors evaluated in the Baseline Risk Assessment (Ecology and Environment, 1995) included workers at the Simplot Don Plant and FMC Elemental Phosphorus Plant and residents living in the vicinity of the two facilities.

For current Simplot Don Plant workers, the highest potential risks estimated were due to exposure to gamma radiation from the gypsum stack. The phosphate ore used at the Don Plant contains naturally occurring radionuclides. Gypsum, which is the main byproduct of the extraction of phosphate materials from the ore, retains some of those radionuclides, such that radiation levels are elevated with respect to unaffected soils in the EMF area. However, the levels of radiation measured at the Don Plant have not been found to be sufficiently elevated to require a radiation protection program under 29 CFR 1910.96.

2.1 Gypsum Stack Workers

Gypsum is produced continuously by the Don Plant process and is stacked onsite in a slurry form by hydraulic placement. It is necessary to manage the stack to maintain the integrity of the dikes used to contain the gypsum slurry on top of the stack and also to maintain overall stack stability.

The gypsum stack workers are backhoe and bulldozer operators whose job functions are to raise and maintain the dikes around the top of the stack. Dike building is performed by excavating gypsum from the immediate interior area with a backhoe and piling it around the edges. A bulldozer is used to grade and shape the dikes. Both the backhoe and bulldozer have enclosed cabs that provide the operators with some shielding from gamma radiation emitted by the gypsum stack. The backhoe and bulldozer operators work on the stack for an average of approximately 28 hours per week (see Section 2.4). The remainder of their work week consists of breaks and cleanup time. Dike-raising activities are conducted year-round.

There are three workers employed full-time in dike maintenance: two backhoe operators and one bulldozer operator.

2.2 Findings of the Baseline Risk Assessment

The Baseline Risk Assessment estimated worker exposures based on gamma radiation measurements made during the aerial radiological survey of the Pocatello area performed by EG&G on behalf of EPA in June and July 1986. The survey measured gamma radiation levels using a detector array mounted on a helicopter. The survey was conducted by flying a series of parallel paths across the area at an average altitude of 150 feet above ground surface. The paths were spaced 250 feet apart.

Based on measurements from this study, the average gamma radiation level was estimated to be 38.7 μR/hr on the gypsum stack. The background exposure rate in the Pocatello area was estimated to be 12.6 μR/hr. Using these average gamma levels, incremental doses and risks to workers were estimated in the Baseline Risk Assessment based on a series of assumptions regarding exposure duration, worker behavior and shielding effects of equipment. In accordance with EPA risk assessment guidance, only a high end, or reasonable maximum exposure case, was evaluated for workers. This evaluation is considered to be conservative because it contained a series of assumptions that cumulatively would be likely to result in an overestimate of the actual exposure.

Using this procedure the Baseline Risk Assessment estimated the incremental lifetime cancer risk to be 5.0E-4 for gypsum stack workers with a background risk of 2.44E-4. By contrast, the estimated background cancer risk to residents in the area due to external radiation from soils and cosmic radiation was estimated in the Baseline Risk Assessment at about 1.8E-3, based on the 1986 aerial radiological survey of the Pocatello and EPA's standard default residential exposures.

2.3 Gamma Radiation Survey Performed in 1994

In 1994, Simplot and FMC conducted a ground survey of gamma exposure. The survey was performed in accordance with standard methods used to measure radiation levels under programs administered by the Occupational Health and Safety Administration (i.e., 29 CFR 1910) and the US Department of Energy, and provided a direct comparison with the findings of the aerial survey. The results of the ground survey were presented in Appendix O of the RI Report (Bechtel, 1996), but were not considered by EPA in the risk assessment.

Results of the ground survey, assuming no shielding, were 18.5 μR/hr (average exposure) for a gypsum stack worker, with a background rates, measured to the north of the Don Plant, estimated between 12.6 and 15.8 μR/hr (measured to the north of the Don Plant), and between 21 and 42 μR/hr (measured in the hills adjacent to the gypsum stack). The average exposure rate for the gypsum stack workers measured in the ground survey was approximately 50% of the 38.7 μR/hr estimated in the Baseline Risk Assessment.

As noted in the Feasibility Study (FS; Simplot 1997a), exposure rates derived from ground level measurements may differ from those estimated from the aerial survey, due to the differences in measurement techniques. Direct comparison of estimated worker exposures from one study with background levels from another may not be appropriate. However, estimates of background radiation from the two studies were in reasonable agreement (see Section 2.5).

Occupational radiation exposures for gypsum stack workers are below the maximum levels established by OSHA and by EPA Radiation Protection Guidance to Federal Agencies for Occupational Exposure to Radiation. Whole body radiation doses for gypsum stack workers were estimated to be 35 mrem per year by the ground survey and 73 mrem per year by the aerial survey. These radiation exposures are a small fraction of the maximum permissible levels. For example, OSHA has established a Maximum Permissible Dose (MPD) for workers that should not be exceeded without careful consideration of the reason for doing so (FR Vol. 52 No. 17). For whole body exposure the MPD is 5,000 mrem per year. In addition OSHA requires implementation of a formal radiation protection program where external doses have a potential to exceed 500 mrem per year for workers less than 18 years of age and 1,250 mrem per year for older workers (29 CFR 1910.96). The U.S. Nuclear Regulatory Commission has set an occupational dose limit of 5,000 mrem per year Total Effective Dose Equivalent (TEDE) with the requirement that doses be kept as far below that level as is reasonably achievable (ALARA). The Mine Safety and Health Administration (MSHA) regulatory dose limits are similar. Although not strictly applicable, these criteria are pertinent and will be considered in the identification and development of remedial actions.

2.4 Subsequent Gamma Radiation Survey

In 1997/1998 Simplot performed an additional exposure study to support remedial design. The study was implemented based on a work plan (Simplot, 1997b), which was reviewed by EPA prior to

implementation. The primary goal of the monitoring program was to evaluate average exposure for gypsum stack workers over a three month period. The study report is provided in Appendix A. Key findings were as follows:

- Average gamma radiation dose rate on the stack (estimated from six dosimeters placed around the dikes of the upper stack) was measured at 29.9 μR/hr.

- Average gamma radiation exposure for the gypsum stack workers was estimated at 21.2 μR/hr.

- The study found that the workers spent an average of 28 hours per week on the stack.

This study did not attempt to quantify background radiation levels.

2.5 Background Radiation Levels

The evaluation of the need for remedial actions to protect gypsum stack workers is based on the incremental risk (above background) due to gamma radiation exposure on the stack. As noted in the RI/FS and associated documents, determination of a single background level for gamma radiation in the EMF Site has not been possible.

The aerial survey estimated the background gamma radiation level at 12.6 μR/hr in the flats portion of the Site and in the 14.5 to 22 μR/hr range, with some locations in the 22 to 30 μR/hr range in the Bannock Hills portion of the Site. This indicates that natural background levels vary from location to location, most likely depending on the nature of the ground surface (for example, where volcanic rock is at or near the surface radiation levels are likely to be higher than for alluvial covered areas).

The ground survey estimated a background level of 12.6-15.8 μR/hr, measured in the vicinity of the Portneuf river and 21 to 42 μR/hr in the Bannock Hills to the south of the Don Plant. These ranges are in reasonable agreement with the aerial survey.

3.0 GAMMA RADIATION MONITORING/EXPOSURE MITIGATION PLAN

The technical approach to the monitoring and mitigation program was developed using Data Quality Objectives (DQOs) as follows.

The problem is the need to determine worker doses above background levels. The physical survey areas are the gypsum stack and the background regions surrounding the Don Plant. Measurements need to be able to ascertain weekly exposure rates as low as 2 mrem (equivalent to 100 mrem per year). Measurement results will be evaluated to be sure that the DQOs are met.

Hence, the goals of the proposed monitoring and mitigation program are to measure gamma radiation exposures for gypsum stack workers and determine whether it is necessary and feasible to lower those exposures. Personal dosimeters will be evaluated to determine if particular activities result in higher levels of exposure than others. Gamma exposure will be integrated over a three-month period to evaluate average exposure. If exposure levels exceed the remedial action objectives (see Section 1.2), a range of mitigation measures will be identified and evaluated. Selected measures will be implemented with on-going monitoring to evaluate their effectiveness.

3.1 Gamma Mapping of Background Areas

Regional background exposure rates will be measured at 30 locations ranging up to a mile from the gypsum stack. Half the locations will be selected in the Off-Plant Area to the north of the Don Plant and the other half in the Bannock Range to the south. In some areas to the north, gamma radiation levels are elevated due to the use of elemental phosphorus slag as road base. These areas are clearly shown on the aerial survey and will not be included in the background evaluation.

Measurements will be conducted using an unshielded, Ludlum 2" sodium iodide (NaI) crystal coupled to a Ludlum Model 2350 data logger. Location data obtained using a GPS unit will be merged with the exposure rate data using a laptop computer. The NaI crystal is sensitive down to as low as 5 μR/hr levels. The system will be calibrated both by the manufacturer and in the field against a previously calibrated High Pressure Ion Chamber (HPIC) by taking concurrent measurements with the HPIC and each NaI-data logger system at the same locations. Calibration curves will be generated using linear

regression analysis. If the data from the individual instruments are essentially the same, a single calibration curve applicable to all systems will be generated.

3.2 Gypsum Stack Monitoring

3.2.1 Workers to be Monitored

Simplot employs three workers full time on the stack for dike building and maintenance activities. Two workers operate backhoes and the third operates the bulldozer. Monitoring of gamma radiation exposures for these three workers will be performed during this study.

3.2.2 Monitoring of Gamma Exposure to Gypsum Stack Workers.

Earlier studies, including the Baseline Risk Assessment, indicate that average gamma radiation levels on the gypsum stack are in the range 18.5 to 38.7 μR/hr, with background levels ranging from 12 to 42 μR/hr. Because potential doses to workers may be in excess of background, it is important to verify both the gamma background exposure rate and average worker exposure rates on the stack.

For three months, each worker will wear a Landauer high-sensitivity dosimeter that will be analyzed monthly by the vendor. These dosimeters are the only ones available that can achieve a sensitivity of 0.1 mrem for one-week exposures, but they are special-use dosimeters that are not certified by National Voluntary Accreditation Program (NVLAP) for worker exposure monitoring programs. However, for the purposes of this study these data will provide accurate estimates of each worker's doses and the time distribution of the doses. Since they are not being used to establish an exposure monitoring program under OSHA, they are well-suited to assess the levels of exposure for the stack workers in this application.

At the end of each work shift the dosimeters will be stored in a designated location in the employee change room until use the next work day. Another dosimeter will be located in the employee change room for the duration of the study to measure any non-stack related gamma radiation. The average worker exposure rates on the stack will be the measured values adjusted to account for any radiation measured by the dosimeters while being stored between work periods.

3.2.3 Review of Work Records

The study will include generation of work records to quantify the total amount of time that the workers spend on the stack and the total amount of time they spend inside and outside the vehicles. Those hours will be merged with the stack gamma exposure rates to make an estimate of exposures for gypsum stack workers. Each gypsum stack worker will be asked to use a form similar to the following to log his work time for the 90-day period corresponding to the monitoring period.

Work Location Log for Gypsum Stack Workers	Date:	
WORK HOURS IN EACH LOCATION	INSIDE VEHICLE	OUTSIDE VEHICLE
On the gypsum stack		
Off the gypsum stack		

3.2.4 Gamma Mapping of the Gypsum Stack

The same instrumentation used to monitor worker exposures (see Section 3.2.2) will be used to measure gamma radiation levels in the work areas on the stack. A total of 15 dosimeters will located at approximately equal distance along the stack dike work areas for the duration of the study. These data will help quantify the mean value in gamma fields that could be encountered by gypsum stack workers. The average gamma radiation level will be estimated by averaging the readings on the 15 dosimeters. In addition, gamma mapping of the work area will be performed using the same methods and equipment as mapping of the regional background areas (see Section 3.1). Mapping of regional areas and the stack work areas will be performed in the same event.

3.3 Quality Assurance/Quality Control

Landauer participates in the NVLAP and its dosimetry program meets those standards. Gamma exposure mapping measurements of the stack and background regions will be made using a vendor-calibrated Ludlum 2" NaI detector system that will also be calibrated in the field using a secondary NIST traceable high pressure ion chamber. Calibration documentation for each instrument used will be provided

in the study report. Workers will be trained in data entry at the beginning of the study, and workers will enter data into appropriate forms each day.

Data quality will be evaluated by comparison of worker exposure estimates with daily activities and the results of dosimeters monitoring the stack. Final data review will be performed by Dr. C.A. Little, of MFG/Shepherd Miller, Inc., Fort Collins, Colorado.

4.0 SCHEDULE AND DELIVERABLES

Monitoring will be performed on a continuous basis for three months. Data and information gathered in this study will be evaluated to determine if the information is sufficient to form the basis of worker protection design. The evaluation will take into account the data quality (as determined by QA/QC information), and completeness (as determined from daily logs of measured doses and operator activities).

A Study Report will be provided within 90 days after completion of monitoring that summarizes and interprets the data. If reduction of exposure is determined to be required, based on the remedial objectives, the report will provide a work plan for testing of possible shielding, or other mitigation methods, that may be required. If shielding is determine to be a potential option, it is likely that tests will be performed on stationary vehicles using steel plates to identify options to mitigate exposures to the vehicle operators. The configurations of the floors, walls and controls of the equipment will be taken into account when developing shielding. The test would likely be a month in duration. The work plan will also provide details of the testing and implementation schedule and details of on-going personnel monitoring to evaluate the effectiveness of the mitigation measures.

5.0 REFERENCES

Bechtel, 1996. "*Remedial Investigation Report for the Eastern Michaud Flats Site*," Bechtel Environmental, Inc.

Ecology & Environment, Inc., 1996. *Baseline Human Health Risk Assessment, Eastern Michaud Flats, Pocatello, Idaho,* prepared for USEPA

J.R. Simplot Company, 1997a. *Feasibility Study for the Simplot Subarea of the Eastern Michaud Flats Superfund Site.* Prepared by MFG, Inc.

J.R. Simplot Company, 1997b. *Gamma Radiation Exposure Monitoring of Gypsum Stack Workers at the J.R. Simplot Don Plant in Support of Remedial Design. Eastern Michaud Flats Superfund Site, Pocatello, Idaho.*

USEPA, 1998. *Record of Decision, Declaration Decision Summary and Responsiveness Summary for Eastern Michaud Flats Superfund Site*. Pocatello, Idaho, US EPA Region 10. June 1998.

USEPA, 2002. *Consent Decree for Remedial Design/Remedial Action for the Simplot Plant Area at the Eastern Michaud Flats Superfund Site*. US EPA Region 10. May 9, 2002.

APPENDIX

APPENDIX A

J.R. Simplot Don Plant – Gypsum Stack
Gamma Exposure Characterization Evaluation Project (1998)

J. R. Simplot
Don Plant—Gypsum Stack
Gamma Exposure Characterization
Evaluation Project

D. Edward Gulbransen
Health Physicist

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1.0 Base Line Study

The Simplot Don Plant is part of the Eastern Michaud Flats (EMF) Superfund Site. The Superfund evaluation identified potential risks to human and ecological receptors and evaluated and selected remedial actions to address those potential risks. Potential human receptors evaluated in the Baseline Risk Assessment included workers at the Simplot Don Plant and FMC Elemental Phosphorus Plant and residents living in the vicinity of the two facilities. For current Simplot Don Plant workers, the highest potential risks estimated were due to exposure of workers to gamma radiation from the gypsum stack. The phosphate ore used at the Don Plant contains naturally-occurring radionuclides. Gypsum, which is the main byproduct of the extraction of phosphate materials from the ore, retains some of those radionuclides such that radiation levels are elevated with respect to naturally occurring soils in the EMF area. The levels of radiation measured at the Don Plant have not been found to be sufficient to require a radiation program under 29 CFR 1910.1096.

Gypsum is produced continuously by the Don Plant process and is stacked onsite in a slurry form by hydraulic placement. It is necessary to manage the stack to maintain the integrity of the dikes and also to maintain overall stack stability.

The gypsum stack workers are backhoe and bulldozer operators whose job it is to raise and maintain the dikes around the top of the stack. This is done by scooping gypsum up from the immediate interior area with a backhoe and piling it around the edges. A bulldozer is used to grade and shape the dikes. Both the backhoe and bulldozer have enclosed cabs. The backhoe and bulldozer used on the gypsum stack provide partial shielding to their operators from gamma radiation emitted by the gypsum stack. The backhoe and bulldozer operators work on the stack 30 and 32 hours per week respectively. The remainder of their work week consists of breaks and cleanup time. Dike-raising activities are conducted year-round.

There are three workers employed full-time in dike maintenance: two backhoe operators and one bulldozer operator.

2.0 Evaluation Project

The objective of this evaluation project is both to measure gamma radiation exposures for gypsum stack workers on a daily basis to determine if particular activities result in higher levels of exposure than others and to evaluate an average exposure based on a three month period of time to determine if additional monitoring is warranted. The evaluation project is outlined as follows: (2.1) review existing EPA exposure report, (2.2) evaluation instrumentation, (2.3) real time data collection, (2.4) passive data collection, (2.5) final report. This report includes: (a) summary and interpretation of the data collected; (b) comparison of the measured exposures with risk assessment findings and pertinent regulations; and (c) evaluation and selection of actions to reduce exposures to an acceptable level, if appropriate.

2.1 Review Existing EPA Exposure Report

A review of the aerial gamma radiation measurements performed by EG&G on behalf of EPA in June and July 1986 (EPA, 1987) was performed to determine a baseline to assess instrumentation needs and dosimetry placements. In the survey performed by EG&G, gamma radiation measurements were made using a detector array mounted on a helicopter. The survey was conducted by flying a series of parallel paths across the area, spaced 250 feet apart, at an average altitude of 150 feet above ground surface. Based on measurements from this study, gamma radiation levels were estimated at 38.7 micro-Roentgen per hour (μR/hr) on the gypsum stack. This value was used in various calculations to determine the expected dose rate and accumulated doses the workers may encounter. These calculated exposures were used to determine the sensitivity needed in the dose rate and real time dosimetry instruments as well as to determine if a three month period of time would provide significate exposure which could be registered on the personnel and environmental dosimeters.

2.2 Evaluation Instrumentation

Daily exposure to the gypsum stack workers were monitored by electronic dosimetry. The instrument model chosen for this function was the SAIC PD3i electronic dosimeter. These instruments were calibrated by the manufacturer. The Certificate of Calibration data sheets are located in Attachment A of this report. The PD3i measures photon radiation (gamma and x-rays) and provides dose measurements and dose rate measurements. The PD3i has the capability of measuring dose rates in the μR/hr range, however it was anticipated that some statistical fluctuation resulting in erroneous reading would be encountered at that sensitivity. These fluctuations will be identified and discarded from the study. The PD3i access control software requires a worker identification number (ID#) and a job task number (RWP) before an electronic dosimeter

can be assigned to a worker. This data is recorded by the entry or exit date and time along with the dose received and the peak dose rate radiation field that the worker entered into during the shift. The gypsum stack work activities were broken into two job tasks; bulldozer operation was assigned the job task number 333 and back-hoe operation was assigned the job task number 444.

Four employees were being evaluated during this characterization project. Their ID numbers are as follows: 227, 425, 458 and 498.

It was determined that a Ludlum Model 3 with a 44-2 probe would be adequate for the initial survey of the gypsum stack. The Model 44-2 consists of a one inch diameter by one inch thick sodium iodide (NaI) crystal coupled to a photomultiplier tube and is housed in a 0.062 inch thick aluminum housing. The Ludlum instrument in this configuration indicated radiation in unit of micro-Roentgen per hour (μR/hr) which corresponds with the estimated radiation levels determined by EG&G.

The purpose of the initial survey is to evaluate the variability of gamma radiation levels on the stack and to determine the relative radiation levels in specific areas where work occurs which is primarily around the dikes. The gamma exposure rate measured along the dike of the gypsum stack ranges from 26 μR/hr (southwest corner) to 80 μR/hr (northeast corner). The environmental TLDs were assigned locations based on this initial survey. It is understood that work takes place over the whole dike, however it is feasible that a worker may spend the majority of his/her work week in these higher dose rate fields. Therefore, to provide data that could be used in this worse case scenario a conservative approach was taken by placing these TLDs in the higher dose rate fields. See Attachment B for a detailed map showing the dose rate results of this survey.

Due to the harsh nature of Idaho winters, a ruggedized Spherical Dosimeter manufactured by Thermo NUtech was chosen for outdoor use. Five matched TLD-100 chips are contained in a cavity within a one inch diameter sphere of polyethylene. The cavity closure is a threaded plug which is gasketed to maintain a moisture-proof seal. The polyethylene sphere provides 1000 mg/cm^2 of attenuation, as well as physical protection of the TLD chips. The Spherical Dosimeter will respond to beta energies above 2 MeV (mega-electron volts) and photons energies above 15 keV (kilo-electron volts). A deep dose equivalent will be reported. The TLD-100 (LiF; Mg, Ti) chips were chosen due to the well-known characteristics of LiF, such as a wide range of linear energy response, near tissue-equivalent density and a fading rate of only 1% per year. Six environmental TLDs were positioned around the dike where they remained throughout the three month evaluation period. See Attachment C for a detailed map of the environmental TLD locations.

For personnel monitoring the Thermo NUtech TLD-100 thermoluminescent dosimeter was chosen again because it is sensitive, withstands most environmental stresses, has an energy response similar to soft tissue and suffers negligible fading. The TLD-100 contains three lithium fluoride chips. One is behind a 10 mg/cm^2 filter to measure both the "shallow" and "deep" dose equivalents. The other chips are behind a 285 mg/cm^2 filter to measure only penetrating radiation (photons).

2.3 Real Time Data Collection

Real time data collection was accomplished using the electronic dosimeter PD3i and its software package. Data was taken from the PD3i access control software and compiled into the tables found in Attachment D. These tables are a compilation of entries and exits made by each employee being monitored during this evaluation. The tables are arranged

by employee. The key to these tables is as follows: *Record #* -- a sequential numbering of log entries into the software data base; *Type* -- "E" indicates an entry into the system and "X" indicates an exit out of the system; *Date & Time* -- Date and time the entry was recorded; *Elapse Time* -- Time the dosimeter was in service gathering data; *User ID#* -- Worker's employee number; *Dose* --Radiation dose received during the time the dosimeter was in service; *Peak Dose Rate* -- Highest dose rate field entered into while the dosimeter was in service; *RWP* -- The job task number associated with the work being performed; *Serial #* -- The dosimeter ID #;

2.4 Passive Data Collection

Passive data collection was accomplished using the environmental and personnel dosimeters discussed in section 2.3. The TLDs were collected and returned to Thermo NUtech for processing. TLD Environmental Monitor Report is used for reporting environmental dosimeter results. Each stripe pertains to a single environmental dosimeter. *Column One* -- identifies the dosimeter by its issued number; *Column Two* -- lists any identifying location information; *Columns Three through Seven* -- reports the dosimeter readings in mrem for each of the five chips in the dosimeter. Although the control dosimeter readings are reported at the beginning of the report, they are not subtracted from any of the other readings; *Column Eight* -- averages the five individual readings in columns three through seven; *Column Nine* -- reports an uncertainty estimate. This value is twice the standard deviation of the five individual readings and corresponds to a 98% confidence interval; *Column Ten* -- reports the measured dose rate in mrem/week. It is based on the average reading from column eight and the elapsed time between annealing and readout. These dates are reported at the top of the monitor report; *Column Eleven* -- indicates the exchange frequency. The legend for the codes in this column appear at the bottom of the report.

Current TLD Occupational Radiation Exposure Report is used for reporting personnel dosimeter results. Each stripe pertains to a single personnel dosimeter. *Column One* -- identifies the dosimeter by its issued number; *Column Two* -- lists work location information, GS equals Gypsum Stack; *Column Three* -- lists the employee ID # or TLD location; *Column Four* -- not applicable to this report; *Column Five* -- indicates the service code "T" which indicates a whole body badge and "I" which indicates irregular use because of its one time use for the three months of the evaluation; *Column Six* -- dates the TLDs were issued and returned to Thermo NUtech; *Columns Seven through Nine* -- dose recorded during evaluation period for the various categories, top row is for deep dose and lens of the eye dose, bottom row is shallow dose and extremity dose; *Columns Ten through Thirteen* -- accumulated dose, top row is for the current quarter and bottom row for the year. Although these values were reported, due to the three month duration of this evaluation they are not applicable. Results from columns seven through nine will be utilized and reported on the individual workers Form 5; *Column Fourteen* -- indicates the legal permissible dose and the accumulated lifetime deep dose exposure received.

The Thermo NUtech TLD service meets performance requirements of standards developed by the Health Physics Society and the American National Standards Institute (ANSI) and Regulatory Guides of the U. S. Nuclear Regulatory Commission. Since 1984, Thermo NUtech has maintained its accreditation by the National Voluntary Laboratory Accreditation Program (NVLAP) for satisfactory compliance with criteria established in Title 15, Part 7 Code of Federal Regulations. Thermo NUtech TLD services is also accredited by the Department of Energy Laboratory Accreditation Program (DOELAP). The TLD results are found in Attachment E of this report.

2.5 Final Report

2.5.a Summary and Interpretation of the Data Collected

The following table is a summation of the data collected by the real time monitoring PD3i electronic dosimeters:

Job Task	Hours Worked	Dose Received (mrem)	Dose Rate (μR/hr)
333	326.37	6.21	19.03
444	378	8.18	21.64
444	345	7.87	22.81
444	8.32	.13	15.6
Totals	**1,057.69**	**22.39**	**21.17 (Average)**

During the three month period of study, there were four workers monitored by the real time dosimeters for an accumulated total of 1,057.69 hours. During this time the workers received an accumulated exposure of 22.39 mrem which averages out to an effective dose rate of 21.17 μR/hr. Subtracting the last worker's hours worked from the total number of hours worked would equal 1,049.37 hours worked in a calendar quarter by the remaining three workers. An average number of hours worked per calendar quarter for each of the three main gypsum stack workers would be 349.79 hrs/qtr. divided by 12.5 weeks in a quarter would equal 27.98 hrs/wk.

The following table is a summation of the data collected by the environmental dosimeters using a total exposure time of 2,208 hours (92 days):

Badge #	Dose Received (mrem)	Dose Rate (μR/hr)
00006	71	32.16
00007	74.4	33.70
00008	69.0	31.25
00009	60.8	27.54
00010	53.2	24.09
00011	68.2	30.89
Totals	**396.6**	**29.94 (Average)**

Each of the six environmental TLDs were exposed from October 21, 1997 to January 21, 1998 for a total of 92 days which equals 2,208 hours. These TLDs received an accumulated exposure of 396.6 mrem which averages out to an accumulated environmental dose rate of 29.94 μR/hr.

The following table is a summation of the data collected by the personnel dosimeters worn by the gypsum stack workers:

Employee ID #	Badge #	Dose Received (mrem)
227	1010	0
425	1011	0
458	1009	0

Three of the four gypsum stack workers were personnel dosimeters. These dosimeters have a dose received reporting threshold of 10 mrem. Therefore, any dose received under this threshold will be reported as zero. That explains why there is a difference in the reported values between the personnel and electronic dosimeters.

The following table is a summation of the data collected by the personnel dosimeters placed inside the cabs of the dike building equipment:

Equipment Type	Badge #	Dose Received (mrem)
Large Back-hoe	1006	0
Small Back-hoe	1007	232
Bulldozer	1008	0

Each of the three equipment TLDs were exposed from October 21, 1997 to January 21, 1998 for a total of 92 days which equals 2,208 hours. Only badge # 1007 received an exposure above the threshold value of 10 mrem. The 232 mrem received by badge #1007 averages out to 105 μR/hr.

2.5.b Pertinent Regulations

In the Title 29 of the Code of Federal Regulation Part 1910.1096, Ionizing Radiation -- Every employer shall supply appropriate personnel monitoring equipment, such as film badges, pocket chambers, pocket dosimeters, or film rings, and shall require the use of such equipment by:

Each employee who enters a restricted area under such circumstances that he receives, or is likely to receive, a dose in any calendar quarter in excess of 25 percent of the applicable value specified in paragraph (b) (1) of this section; and

(i) Each employee under 18 years of age who enters a restricted area under such circumstances that he receives, or is likely to receive, a dose in any calendar quarter in excess of 5 percent of the applicable value specified in paragraph (b) (1) of this section; and

Each employee who enters a high radiation area.

A restricted area means any area access to which is controlled by the employer for purpose of protection of individuals from exposure to radiation or radioactive materials.

Exposure of individuals to radiation in restricted areas.

(b) (1) Except as provided in paragraph (b) (2) of this section, no employer shall possess, use or transfer sources of ionizing radiation in such a manner as to cause any individual in a restricted area to receive in any period of one calendar quarter from sources in the employer's possession or control a dose in excess of the limits specified in Table G-18:

Table G-18

Whole body: Head & Trunk; active blood-forming organs; lens of eyes; or gonads	1¼ rem/qtr.
Hands and forearms; feet and ankles	18¾ rem/qtr.
Skin of whole body	7½ rem/qtr.

(2) An employer may permit an individual in a restricted area to receive doses to the whole body greater than those permitted under subparagraph (1) of this paragraph, so long as:

During any calendar quarter the dose to the whole body shall not exceed 3 rems; and

The dose to the whole body, when added to the accumulated occupational dose to the whole body, shall not exceed 5 (N-18) rems, where "N" equals the individual's age in years at his last birthday; and

The employer maintains adequate past and current exposure records which show that the addition of such a dose will not cause the individual to exceed the amount authorized in this subparagraph. As used in this subparagraph Dose to the whole body shall be deemed to include and dose to the whole body, gonad, active blood-forming organs, head and trunk, or lens of the eye.

A radiation area means any area, accessible to personnel, in which there exisits radiation at such levels that a mjor portion of the body could receive in any 1 hour a dose in excess of 5 mrem, or in any 5 consecutive days a dose in excess of 100 mrem. (100 mR/40 hours = 2.5 mR/hr)

A high radiation area means any area, accessible to personnel, in which there exists radiation at such levels that a major portion of the body could receive in any one hour a dose in excess of 100 mrem.

2.5.c Actions, if Appropriate

According to section 2.5.b, Simplot is required to provide appropriate personnel monitoring if any of the values in the following table are exceeded:

Requirement	Value	Percent	Acceptance Level
Whole Body	1,250 mrem/qtr.	25%	312.5 mrem/qtr.
Hand/Feet	18,750 mrem/qtr.	25%	4,687.5 mrem/qtr.
Skin	7,500 mrem/qtr.	25%	1,875 mrem/qtr.
Under 18 years old			
Whole Body	1,250 mrem/qtr.	5%	62.5 mrem/qtr.
Hand/Feet	18,750 mrem/qtr.	5%	937.5 mrem/qtr.
Skin	7,500 mrem/qtr.	5%	375 mrem/qtr.
Dose Rate	2.5 mR/hr	N/A	2.5 mR/hr

Utilizing the most conservative data available from this characterization project the following credible worse case scenario was calculated: if a worker was exposed to the highest accessible recorded dose rate of 105 μR/hr (taken from the cab of the small back-hoe) for the maximum hours of work per week of 32 (base line study) for 12.5 weeks in a calendar quarter it would equal an exposure of 42 mrem/qtr. Both the dose rate and the exposure are within the acceptance levels of the standard.

This calculated exposure based on actual data collected by this characterization project does not substantially alter the Incremental Cancer Risk established by the Baseline Risk Assessment performed by EG&G on behalf of EPA in June and July 1986.

Therefore, it is my recommendation that no further monitoring is required.

Attachment A

Certificates of Calibration

An Employee-Owned Company

Commercial Products Division

Certificate of Calibration

Date of Calibration:	Oct 7,97
Model Number:	PD-3i
Serial Number:	C.4892

Linear Calibration - Procedure 201360 Rev –

Range Used:	Sheppard 81-18 Serial Number : 7093
Source:	^{137}Cesium
Exposure Rate:	694.1 mR/h
Exposure Time:	450 seconds
Calibration Exposure:	86.76 mR ±5%
Dose Conversion Factor:	1.45 µR/count

Dead Time Correction - Procedure 201360 Rev -

Range Used:	Sheppard 81-18 Serial Number : 7093
Source:	^{60}Cobalt + ^{137}Cesium
Exposure Rate:	379.0 R/h
Exposure Time:	30 seconds
Calibration Exposure:	3.158 R ±5%
Dead Time per Count:	19.2 µs/count
Background Correction:	4 c/1024s

This is to certify the SAIC Commercial Products Division in San Diego, California, has on this date, certified this instrument to be within ±20% of response to ^{137}Cs from 50 keV to 3 Mev (-70% response at 40 keV) and ±15% or 20µR/h, whichever is greater, from 0 to 500 R/h. The calibration ranges used in the above bear Letters of Certification traceable to the National Institute of Standards and Technology.

Calibrated by _____ Date: OCT 8 '97

Quality Assurance _____ Date: OCT 8 '97

An Employee-Owned Company

Commercial Products Division

Certificate of Calibration

Date of Calibration:	Oct 2, 97
Model Number:	PD-3I
Serial Number:	C. 4888

Linear Calibration - Procedure 201360 Rev -

Range Used:	Sheppard 81-18 Serial Number : 7093
Source:	^{137}Cesium
Exposure Rate:	694.1 mR/h
Exposure Time:	450 seconds
Calibration Exposure:	86.76 mR ±5%
Dose Conversion Factor:	1.48 µR/count

Dead Time Correction - Procedure 201360 Rev -

Range Used:	Sheppard 81-18 Serial Number : 7093
Source:	^{60}Cobalt + ^{137}Cesium
Exposure Rate:	379.0 R/h
Exposure Time:	30 seconds
Calibration Exposure:	3.158 R ±5%
Dead Time per Count:	18.5 µs/count
Background Correction:	4 c/1024s

This is to certify the SAIC Commercial Products Division in San Diego, California, has on this date, certified this instrument to be within ±20% of response to ^{137}Cs from 50 keV to 3 Mev (-70% response at 40 keV) and ±15% or 20µR/h, whichever is greater, from 0 to 500 R/h. The calibration ranges used in the above bear Letters of Certification traceable to the National Institute of Standards and Technology.

Calibrated by SAIC 11 Date: OCT 8 '97

Quality Assurance SAIC 15 Date: OCT 8 '97

An Employee-Owned Company

Commercial Products Division

Certificate of Calibration

Date of Calibration:	Oct 2, 97
Model Number:	PD-3I
Serial Number:	C. 4887

Linear Calibration - Procedure 201360 Rev -

Range Used:	Sheppard 81-18 Serial Number : 7093
Source:	^{137}Cesium
Exposure Rate:	694.1 mR/h
Exposure Time:	450 seconds
Calibration Exposure:	86.76 mR ±5%
Dose Conversion Factor:	1.44 µR/count

Dead Time Correction - Procedure 201360 Rev -

Range Used:	Sheppard 81-18 Serial Number : 7093
Source:	^{60}Cobalt + ^{137}Cesium
Exposure Rate:	379.0 R/h
Exposure Time:	30 seconds
Calibration Exposure:	3.158 R ±5%
Dead Time per Count:	19.2 µs/count
Background Correction:	4 c/1024s

This is to certify the SAIC Commercial Products Division in San Diego, California, has on this date, certified this instrument to be within ±20% of response to ^{137}Cs from 50 keV to 3 Mev (-70% response at 40 keV) and ±15% or 20µR/h, whichever is greater, from 0 to 500 R/h. The calibration ranges used in the above bear Letters of Certification traceable to the National Institute of Standards and Technology.

Calibrated by _____ Date: OCT 8 '97

Quality Assurance _____ Date: OCT 8 '97

An Employee-Owned Company

Commercial Products Division

Certificate of Calibration

Date of Calibration:	Oct 1, 97
Model Number:	PD-3I
Serial Number:	C.4886

Linear Calibration - Procedure 201360 Rev -

Range Used:	Sheppard 81-18 Serial Number : 7093
Source:	^{137}Cesium
Exposure Rate:	694.1 mR/h
Exposure Time:	450 seconds
Calibration Exposure:	86.76 mR ±5%
Dose Conversion Factor:	1.40 µR/count

Dead Time Correction - Procedure 201360 Rev -

Range Used:	Sheppard 81-18 Serial Number : 7093
Source:	^{60}Cobalt + ^{137}Cesium
Exposure Rate:	379.0 R/h
Exposure Time:	30 seconds
Calibration Exposure:	3.158 R ±5%
Dead Time per Count:	18.7 µs/count
Background Correction:	4 c/1024s

This is to certify the SAIC Commercial Products Division in San Diego, California, has on this date, certified this instrument to be within ±20% of response to ^{137}Cs from 50 keV to 3 Mev (-70% response at 40 keV) and ±15% or 20µR/h, whichever is greater, from 0 to 500 R/h. The calibration ranges used in the above bear Letters of Certification traceable to the National Institute of Standards and Technology.

Calibrated by _____ Date: OCT 8 '97

SAIC 11

Quality Assurance _____ Date: OCT 8 '97

15

An Employee-Owned Company

Commercial Products Division

Certificate of Calibration

Date of Calibration:	Sept 19,97
Model Number:	PD-3i
Serial Number:	C. 4855

Linear Calibration - Procedure 201360 Rev –

Range Used:	Sheppard 81-18 Serial Number : 7093
Source:	^{137}Cesium
Exposure Rate:	694.1 mR/h
Exposure Time:	450 seconds
Calibration Exposure:	86.76 mR ±5%
Dose Conversion Factor:	1.40 µR/count

Dead Time Correction - Procedure 201360 Rev -

Range Used:	Sheppard 81-18 Serial Number : 7093
Source:	^{60}Cobalt + ^{137}Cesium
Exposure Rate:	379.0 R/h
Exposure Time:	30 seconds
Calibration Exposure:	3.158 R ±5%
Dead Time per Count:	19.2 µs/count
Background Correction:	4 c/1024s

This is to certify the SAIC Commercial Products Division in San Diego, California, has on this date, certified this instrument to be within ±20% of response to ^{137}Cs from 50 keV to 3 Mev (-70% response at 40 keV) and ±15% or 20µR/h, whichever is greater, from 0 to 500 R/h. The calibration ranges used in the above bear Letters of Certification traceable to the National Institute of Standards and Technology.

Calibrated by _____ SAIC 11 Date: OCT 8 '97

Quality Assurance _____ SAIC 15 Date: OCT 8 '97

An Employee-Owned Company

Commercial Products Division

Certificate of Calibration

Date of Calibration:	Sept 19, 97
Model Number:	PD-3I
Serial Number:	C. 4774

Linear Calibration - Procedure 201360 Rev -

Range Used:	Sheppard 81-18 Serial Number : 7093
Source:	^{137}Cesium
Exposure Rate:	694.1 mR/h
Exposure Time:	450 seconds
Calibration Exposure:	86.76 mR ±5%
Dose Conversion Factor:	1.30 µR/count

Dead Time Correction - Procedure 201360 Rev -

Range Used:	Sheppard 81-18 Serial Number : 7093
Source:	^{60}Cobalt + ^{137}Cesium
Exposure Rate:	379.0 R/h
Exposure Time:	30 seconds
Calibration Exposure:	3.158 R ±5%
Dead Time per Count:	18.9 µs/count
Background Correction:	5 c/1024s

This is to certify the SAIC Commercial Products Division in San Diego, California, has on this date, certified this instrument to be within ±20% of response to ^{137}Cs from 50 keV to 3 Mev (-70% response at 40 keV) and ±15% or 20µR/h, whichever is greater, from 0 to 500 R/h. The calibration ranges used in the above bear Letters of Certification traceable to the National Institute of Standards and Technology.

Calibrated by _____ SAIC 11 Date: OCT 8 '97

Quality Assurance _____ SAIC 15 Date: OCT 8 '97

An Employee-Owned Company

Commercial Products Division

Certificate of Calibration

Date of Calibration:	Oct 7, 97
Model Number:	PD-3i
Serial Number:	C. 4688

Linear Calibration - Procedure 201360 Rev -

Range Used:	Sheppard 81-18 Serial Number : 7093
Source:	^{137}Cesium
Exposure Rate:	694.1 mR/h
Exposure Time:	450 seconds
Calibration Exposure:	86.76 mR ±5%
Dose Conversion Factor:	1.73 µR/count

Dead Time Correction - Procedure 201360 Rev -

Range Used:	Sheppard 81-18 Serial Number : 7093
Source:	^{60}Cobalt + ^{137}Cesium
Exposure Rate:	379.0 R/h
Exposure Time:	30 seconds
Calibration Exposure:	3.158 R ±5%
Dead Time per Count:	21.8 µs/count
Background Correction:	4 c/1024s

This is to certify the SAIC Commercial Products Division in San Diego, California, has on this date, certified this instrument to be within ±20% of response to ^{137}Cs from 50 keV to 3 Mev (-70% response at 40 keV) and ±15% or 20µR/h, whichever is greater, from 0 to 500 R/h. The calibration ranges used in the above bear Letters of Certification traceable to the National Institute of Standards and Technology.

Calibrated by _____ (SAIC 11) Date: OCT 8 '97

Quality Assurance _____ (SAIC 15) Date: OCT 8 '97

An Employee-Owned Company

Commercial Products Division

Certificate of Calibration

Date of Calibration:	Sept 19, 97
Model Number:	PD-3i
Serial Number:	C. 4723

Linear Calibration - Procedure 201360 Rev --

Range Used:	Sheppard 81-18 Serial Number : 7093
Source:	^{137}Cesium
Exposure Rate:	694.1 mR/h
Exposure Time:	450 seconds
Calibration Exposure:	86.76 mR ±5%
Dose Conversion Factor:	1.40 µR/count

Dead Time Correction - Procedure 201360 Rev -

Range Used:	Sheppard 81-18 Serial Number : 7093
Source:	^{60}Cobalt + ^{137}Cesium
Exposure Rate:	379.0 R/h
Exposure Time:	30 seconds
Calibration Exposure:	3.158 R ±5%
Dead Time per Count:	19.2 µs/count
Background Correction:	4 c/1024s

This is to certify the SAIC Commercial Products Division in San Diego, California, has on this date, certified this instrument to be within ±20% of response to ^{137}Cs from 50 keV to 3 Mev (-70% response at 40 keV) and ±15% or 20µR/h, whichever is greater, from 0 to 500 R/h. The calibration ranges used in the above bear Letters of Certification traceable to the National Institute of Standards and Technology.

Calibrated by _____ SAIC 11 Date: OCT 8 '97

Quality Assurance _____ 15 Date: OCT 8 '97

An Employee-Owned Company

Commercial Products Division

Certificate of Calibration

Date of Calibration:	Oct 1, 97
Model Number:	PD-3i
Serial Number:	C: 4885

Linear Calibration - Procedure 201360 Rev -

Range Used:	Sheppard 81-18 Serial Number : 7093
Source:	^{137}Cesium
Exposure Rate:	694.1 mR/h
Exposure Time:	450 seconds
Calibration Exposure:	86.76 mR ±5%
Dose Conversion Factor:	1.38 µR/count

Dead Time Correction - Procedure 201360 Rev -

Range Used:	Sheppard 81-18 Serial Number : 7093
Source:	^{60}Cobalt + ^{137}Cesium
Exposure Rate:	379.0 R/h
Exposure Time:	30 seconds
Calibration Exposure:	3.158 R ±5%
Dead Time per Count:	19.4 µs/count
Background Correction:	4 c/1024s

This is to certify the SAIC Commercial Products Division in San Diego, California, has on this date, certified this instrument to be within ±20% of response to ^{137}Cs from 50 keV to 3 Mev (-70% response at 40 keV) and ±15% or 20µR/h, whichever is greater, from 0 to 500 R/h. The calibration ranges used in the above bear Letters of Certification traceable to the National Institute of Standards and Technology.

Calibrated by _____ Date: OCT 8 '97

SAIC 11

Quality Assurance _____ Date: OCT 8 '97

SAIC 15

An Employee-Owned Company

Commercial Products Division

Certificate of Calibration

Date of Calibration:	Oct 1, 97
Model Number:	PD-3i
Serial Number:	C. 4885

Linear Calibration - Procedure 201360 Rev –

Range Used:	Sheppard 81-18 Serial Number : 7093
Source:	^{137}Cesium
Exposure Rate:	694.1 mR/h
Exposure Time:	450 seconds
Calibration Exposure:	86.76 mR ±5%
Dose Conversion Factor:	1.38 µR/count

Dead Time Correction - Procedure 201360 Rev -

Range Used:	Sheppard 81-18 Serial Number : 7093
Source:	^{60}Cobalt + ^{137}Cesium
Exposure Rate:	379.0 R/h
Exposure Time:	30 seconds
Calibration Exposure:	3.158 R ±5%
Dead Time per Count:	19.4 µs/count
Background Correction:	4 c/1024s

This is to certify the SAIC Commercial Products Division in San Diego, California, has on this date, certified this instrument to be within ±20% of response to ^{137}Cs from 50 keV to 3 Mev (-70% response at 40 keV) and ±15% or 20µR/h, whichever is greater, from 0 to 500 R/h. The calibration ranges used in the above bear Letters of Certification traceable to the National Institute of Standards and Technology.

SAIC 11

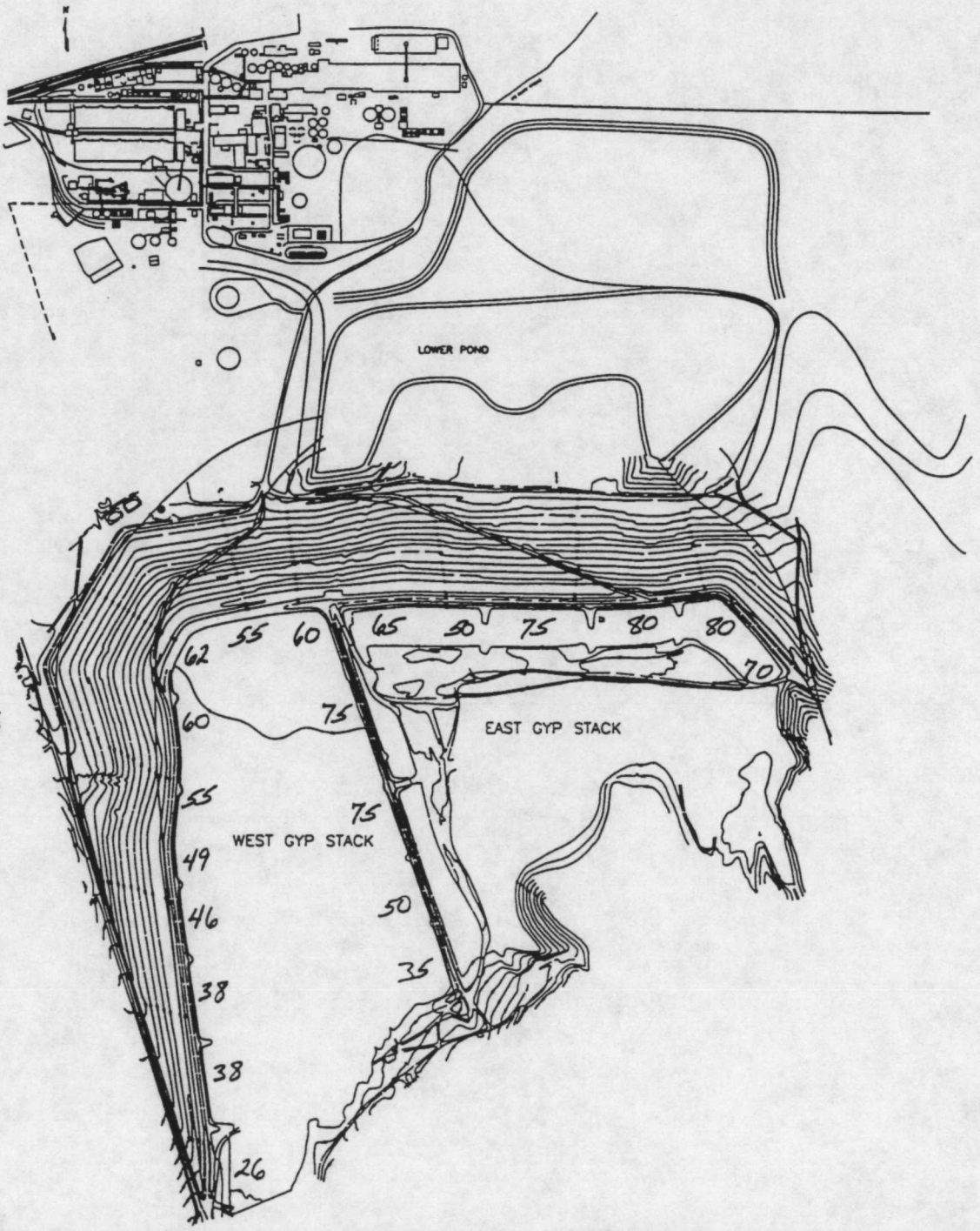
Calibrated by _____ Date: OCT 8 '97

SAIC 15

Quality Assurance _____ Date: OCT 8 '97

Attachment B

Exposure Rate Map



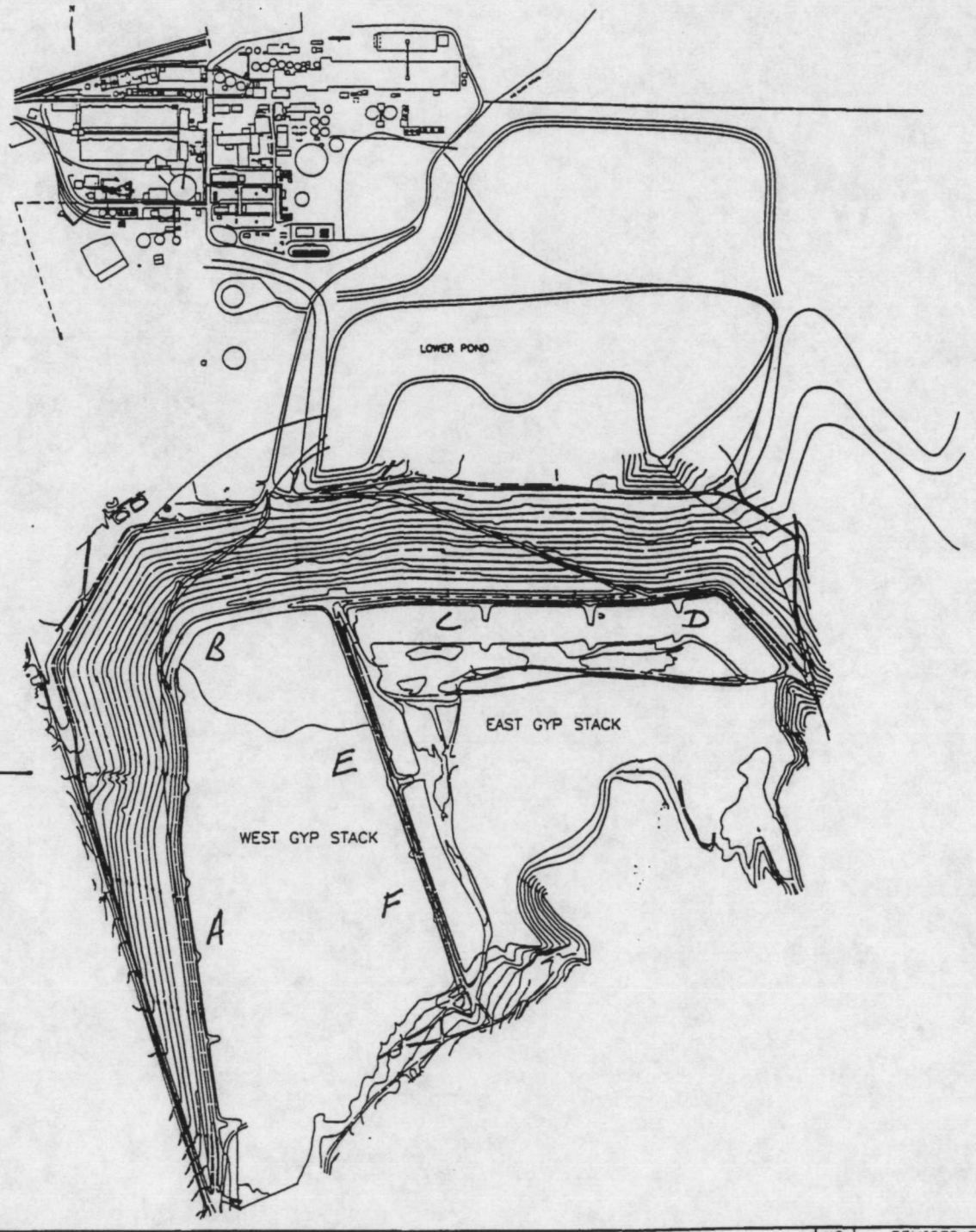
*NOTE: All Exposure Rates Are Expressed in Units of uR/hr.

REFERENCES	NO.	DESCRIPTION

REVISIONS	NO.	REVISED BY	DATE	DESCRIPTION	NO.	REVISED BY

Attachment C

Environmental TLD Locations



Badge #	Location
00006	A
00007	B
00008	C
00009	D
00010	E
00011	F

REFERENCES

NO.	DESCRIPTION

REVISIONS

NO.	REVISED BY	DATE	DESCRIPTION	NO.	REVISED BY

Attachment D

Real Time Exposure Tables

Employee ID # 227

Record #	Type	Date	Time	Elapse Time	User ID#	Dose	Peak Dose Rate	RWP	Serial #	
0016,"	E",	"10/21/97"	,"17:25"		,0000000227,	0.00E+00	0.00e+000,	111	CI4774"	Training
0017,"	X",	"10/21/97"	,"17:25"	0	,0000000227,	0.00E+00	0.00e+000,	111	CI4774"	Training
0021,"	E",	"10/21/97"	,"17:29"		,0000000227,	0.00E+00	0.00e+000,	111	CI4855"	Training
0022,"	X",	"10/21/97"	,"17:29"	0	,0000000227,	0.00E+00	0.00e+000,	111	CI4855"	Training
0035,"	E",	"10/22/97"	,"13:19"		,0000000227,	0.00E+00	0.00e+000,	111	CI4892"	Training
0036,"	X",	"10/22/97"	,"13:19"	0	,0000000227,	0.00E+00	0.00e+000,	111	CI4892"	Training
0053,"	E",	"10/27/97"	,"07:33"		,0000000227,	0.00E+00	0.00e+000,	333	CI4891"	
0057,"	X",	"10/27/97"	,"07:43"	10	,0000000227,	**8.95E+01**	**2.08e+004,**	333	CI4891"	Statistical Spike
0067,"	E",	"10/27/97"	,"14:03"		,0000000227,	0.00E+00	0.00e+000,	333	CI4891"	
0068,"	X",	"10/27/97"	,"14:04"	1	,0000000227,	**1.49E+00**	**3.40e+000,**	333	CI4891"	Statistical Spike
0070,"	E",	"10/27/97"	,"14:06"		,0000000227,	0.00E+00	0.00e+000,	333	CI4774"	
0074,"	X",	"10/27/97"	,"15:50"	104	,0000000227,	3.12E-05	7.80e-005,	333	CI4774"	
0079,"	E",	"10/28/97"	,"07:32"		,0000000227,	0.00E+00	0.00e+000,	333	CI4774"	
0082,"	X",	"10/28/97"	,"15:55"	503	,0000000227,	1.44E-04	4.59e-005,	333	CI4774"	
0088,"	E",	"10/29/97"	,"07:32"		,0000000227,	0.00E+00	0.00e+000,	333	CI4855"	
0094,"	X",	"10/29/97"	,"12:43"	311	,0000000227,	7.84E-05	7.89e-005,	333	CI4855"	
0106,"	E",	"10/31/97"	,"07:43"		,0000000227,	0.00E+00	0.00e+000,	333	CI4892"	
0107,"	X",	"10/31/97"	,"07:44"	1	,0000000227,	0.00E+00	0.00e+000,	333	CI4892"	
0121,"	E",	"11/04/97"	,"07:32"		,0000000227,	0.00E+00	0.00e+000,	444	CI4723"	
0125,"	X",	"11/04/97"	,"15:48"	496	,0000000227,	1.81E-04	8.87e-005,	444	CI4723"	
0154,"	E",	"11/10/97"	,"07:28"		,0000000227,	0.00E+00	0.00e+000,	333	CI4892"	
0158,"	X",	"11/11/97"	,"15:47"	499	,0000000227,	1.68E-04	5.62e-005,	333	CI4892"	
0164,"	E",	"11/12/97"	,"07:31"		,0000000227,	0.00E+00	0.00e+000,	333	CI4723"	
0165,"	X",	"11/12/97"	,"15:48"	497	,0000000227,	1.84E-04	4.60e-005,	444	CI4892"	
0166,"	X",	"11/12/97"	,"15:49"	1	,0000000227,	1.41E-04	8.38e-005,	333	CI4723"	
0171,"	E",	"11/13/97"	,"07:29"		,0000000227,	0.00E+00	0.00e+000,	333	CI4892"	
0175,"	X",	"11/13/97"	,"15:50"	501	,0000000227,	1.54E-04	5.11e-005,	333	CI4892"	
0178,"	E",	"11/14/97"	,"07:29"		,0000000227,	0.00E+00	0.00e+000,	333	CI4723"	
0186,"	X",	"11/14/97"	,"15:46"	497	,0000000227,	1.60E-04	4.93e-005,	333	CI4723"	
0188,"	E",	"11/17/97"	,"07:30"		,0000000227,	0.00E+00	0.00e+000,	333	CI4723"	
0192,"	X",	"11/17/97"	,"15:47"	497	,0000000227,	1.30E-04	4.44e-005,	333	CI4723"	
0196,"	E",	"11/18/97"	,"07:30"		,0000000227,	0.00E+00	0.00e+000,	333	CI4855"	
0198,"	X",	"11/18/97"	,"15:50"	500	,0000000227,	1.96E-04	8.87e-005,	333	CI4855"	
0200,"	E",	"11/19/97"	,"07:30"		,0000000227,	0.00E+00	0.00e+000,	333	CI4855"	
0211,"	E",	"11/25/97"	,"07:29"		,0000000227,	0.00E+00	0.00e+000,	333	CI4723"	
0214,"	X",	"11/25/97"	,"15:45"	496	,0000000227,	1.36E-04	3.94e-005,	333	CI4723"	
0217,"	E",	"11/26/97"	,"07:40"		,0000000227,	0.00E+00	0.00e+000,	333	CI4885"	
0218,"	X",	"11/26/97"	,"15:38"	478	,0000000227,	1.64E-04	3.89e-005,	333	CI4885"	
0222,"	E",	"12/01/97"	,"07:31"		,0000000227,	0.00E+00	0.00e+000,	333	CI4892"	
0225,"	X",	"12/01/97"	,"15:51"	500	,0000000227,	1.99E-04	9.20e-005,	333	CI4892"	
0229,"	E",	"12/02/97"	,"07:29"		,0000000227,	0.00E+00	0.00e+000,	333	CI4723"	
0233,"	X",	"12/02/97"	,"15:44"	495	,0000000227,	1.68E-04	4.44e-005,	333	CI4723"	
0239,"	E",	"12/03/97"	,"07:27"		,0000000227,	0.00e+000,	0.00e+000,	333	CI4885"	
0240,"	X",	"12/03/97"	,"15:49"	502	,0000000227,	1.45E-04	3.40e-005,	333	CI4885"	
0248,"	E",	"12/04/97"	,"07:31"		,0000000227,	0.00E+00	0.00e+000,	333	CI4885"	
0251,"	X",	"12/04/97"	,"15:48"	497	,0000000227,	1.48E-04	4.86e-005,	333	CI4885"	
0255,"	E",	"12/05/97"	,"07:32"		,0000000227,	0.00E+00	0.00e+000,	333	CI4723"	
0260,"	X",	"12/05/97"	,"15:45"	493	,0000000227,	1.58E-04	,7.89e-005	333	CI4723	
0262,"	E",	"12/08/97"	,"07:28"		,0000000227,	0.00E+00	,0.00e+000	333	CI4723	No Exit
	X",	"12/08/97"	,"15:49"	501	,0000000227,	1.47E-04	,3.94e-005	333	CI4723	Estimate
0270,"	E",	"12/09/97"	,"07:28"		,0000000227,	0.00E+00	,0.00e+000	333	CI4723	
0276,"	X",	"12/09/97"	,"15:49"	501	,0000000227,	1.47E-04	,3.94e-005	333	CI4723	
0283,"	E",	"12/10/97"	,"07:27"		,0000000227,	0.00E+00	,0.00e+000	333	CI4885	
0285,"	X",	"12/10/97"	,"15:52"	505	,0000000227,	1.68E-04	,5.35e-005	333	CI4885	
0289,"	E",	"12/11/97"	,"07:26"		,0000000227,	0.00E+00	,0.00e+000	333	CI4885	
0294,"	X",	"12/11/97"	,"15:51"	505	,0000000227,	1.04E-04	,4.37e-005	333	CI4885	
0296,"	E",	"12/12/97"	,"07:29"		,0000000227,	0.00E+00	,0.00e+000	333	CI4892	

0302,"	X",	"12/12/97"	,"13:41"	372	,0000000227,	1.00E-04	,5.11e-005	333	CI4892	
0311,"	E",	"12/16/97"	,"07:29"		,0000000227,	0.00E+00	,0.00e+000	333	CI4723	
0318,"	X",	"12/16/97"	,"15:52"	503	,0000000227,	1.67E-04	,7.89e-005	333	CI4723	
0320,"	E",	"12/17/97"	,"07:39"		,0000000227,	0.00E+00	,0.00e+000	333	CI4885	
0324,"	X",	"12/17/97"	,"15:42"	483	,0000000227,	1.59E-04	,4.86e-005	333	CI4885	
0328,"	E",	"12/18/97"	,"07:30"		,0000000227,	0.00E+00	,0.00e+000	333	CI4892	
0329,"	X",	"12/18/97"	,"15:42"	492	,0000000227,	1.89E-04	,8.18e-005	333	CI4892	
0334,"	E",	"12/19/97"	,"07:28"		,0000000227,	0.00E+00	,0.00e+000	333	CI4723	
0338,"	X",	"12/19/97"	,"15:45"	497	,0000000227,	1.85E-04	,4.44e-005	333	CI4723	
0360,"	E",	"12/29/97"	,"07:34"		,0000000227,	0.00E+00	,0.00e+000	333	CI4892	
0363,"	X",	"12/29/97"	,"15:48"	494	,0000000227,	1.74E-04	,9.71e-005	333	CI4892	
0365,"	E",	"12/30/97"	,"07:25"		,0000000227,	0.00E+00	,0.00e+000	333	CI4892	
0372,"	X",	"12/30/97"	,"15:49"	504	,0000000227,	1.52E-04	,8.18e-005	333	CI4892	
0374,"	E",	"12/31/97"	,"07:30"		,0000000227,	0.00E+00	,0.00e+000	333	CI4892	
0381,"	X",	"12/31/97"	,"15:45"	495	,0000000227,	1.10E-04	,8.69e-005	333	CI4892	
0383,"	E",	"01/02/98"	,"07:29"		,0000000227,	0.00E+00	,0.00e+000	333	CI4723	
0390,"	X",	"01/02/98"	,"15:46"	497	,0000000227,	1.15E-04	,4.93e-005	333	CI4723	
0392,"	E",	"01/05/98"	,"07:27"		,0000000227,	0.00E+00	,0.00e+000	333	CI4723	
0399,"	X",	"01/05/98"	,"15:50"	503	,0000000227,	1.34E-04	,4.93e-005	333	CI4723	
0403,"	E",	"01/06/98"	,"07:29"		,0000000227,	0.00E+00	,0.00e+000	333	CI4723	No Exit
	X",	"01/06/98"	,"15:49"	501	,0000000227,	1.47E-04	,3.94e-005	333	CI4723	Estimate
0411,"	E",	"01/07/98"	,"07:41"		,0000000227,	0.00E+00	,0.00e+000	333	CI4723	
0416,"	X",	"01/07/98"	,"15:46"	485	,0000000227,	1.53E-04	,4.93e-005	333	CI4723	
0418,"	E",	"01/08/98"	,"07:31"		,0000000227,	0.00E+00	,0.00e+000	333	CI4892	
0425,"	X",	"01/08/98"	,"15:45"	494	,0000000227,	1.55E-04	,4.60e-005	333	CI4892	
0427,"	E",	"01/09/98"	,"07:25"		,0000000227,	0.00E+00	,0.00e+000	333	CI4892	
0434,"	X",	"01/09/98"	,"15:51"	506	,0000000227,	1.54E-04	,4.09e-005	333	CI4892	
0436,"	E",	"01/12/98"	,"07:28"		,0000000227,	0.00E+00	,0.00e+000	333	CI4723	
0443,"	X",	"01/12/98"	,"15:46"	498	,0000000227,	1.16E-04	,4.44e-005	333	CI4723	
0445,"	E",	"01/13/98"	,"07:25"		,0000000227,	0.00E+00	,0.00e+000	333	CI4892	
0451,"	X",	"01/13/98"	,"15:50"	505	,0000000227,	1.51E-04	,5.62e-005	333	CI4892	
0456,"	E",	"01/14/98"	,"07:30"		,0000000227,	0.00E+00	,0.00e+000	333	CI4892	
0459,"	X",	"01/14/98"	,"15:48"	498	,0000000227,	1.23E-04	,4.60e-005	333	CI4892	
0461,"	E",	"01/15/98"	,"07:29"		,0000000227,	0.00E+00	,0.00e+000	333	CI4892	
0464,"	X",	"01/15/98"	,"14:40"	491	,0000000227,	1.36E-04	,3.58e-005	333	CI4892	
0469,"	E",	"01/16/98"	,"07:29"		,0000000227,	0.00E+00	,0.00e+000	333	CI4892	
0470,"	X",	"01/16/98"	,"18:13"	464	,0000000227,	2.23E-04	,5.62e-005	333	CI4892	
0473,"	E",	"01/19/98"	,"07:35"		,0000000227,	0.00E+00	,0.00e+000	333	CI4892	
0474,"	X",	"01/19/98"	,"14:24"	409	,0000000227,	1.19E-04	,4.60e-005	333	CI4892	
0476,"	E",	"01/21/98"	,"07:29"		,0000000227,	0.00E+00	,0.00e+000	333	CI4885	
				326.37 hrs		6.21 mrem				

Employee ID# 425

Record #	Type	Date	Time	Elapse Time	Employee #	Dose	Peak Dose Rate	RWP	Serial #	
0024,"	E",	"10/22/97"	,"06:52"		,0000000425,	0.00E+00	0.00e+000,	444,"T	CI4855"	Training
0025,"	X",	"10/22/97"	,"06:52"		,0000000425,	0.00E+00	0.00e+000,	444,"	CI4855"	Training
0027,"	E",	"10/22/97"	,"06:54"		,0000000425,	0.00E+00	0.00e+000,	444,"T	CI4855"	
0037,"	X",	"10/22/97"	,"14:31"	457	,0000000425,	1.54E-04	7.89e-005,	444,"	CI4855"	
0040,"	E",	"10/23/97"	,"06:29"		,0000000425,	0.00E+00	0.00e+000,	444,"T	CI4774"	
0043,"	X",	"10/23/97"	,"14:28"	479	,0000000425,	1.48E-04	7.34e-005,	444,"	CI4774"	
0046,"	E",	"10/24/97"	,"06:28"		,0000000425,	0.00E+00	0.00e+000,	444,"T	CI4892"	
0047,"	X",	"10/24/97"	,"14:28"	480	,0000000425,	1.90E-04	5.62e-005,	444,"	CI4892"	
0049,"	E",	"10/27/97"	,"07:31"		,0000000425,	0.00E+00	0.00e+000,	444,"T	CI4855"	
0063,"	E",	"10/27/97"	,"10:13"		,0000000425,	0.00E+00	0.00e+000,	333,"T	CI4774"	
0064,"	X",	"10/27/97"	,"10:14"	1	,0000000425,	0.00E+00	0.00e+000,	333,"	CI4774"	
0065,"	X",	"10/27/97"	,"11:13"	59	,0000000425,	1.30E-06	0.00e+000,	333,"T	CI4774"	
0073,"	X",	"10/27/97"	,"15:49"	256	,0000000425,	1.81E-04	7.89e-005,	444,"	CI4855"	
0077,"	E",	"10/28/97"	,"07:31"		,0000000425,	0.00E+00	0.00e+000,	444,"T	CI4892"	
0084,"	X",	"10/28/97"	,"15:56"	505	,0000000425,	1.77E-04	5.11e-005,	444,"	CI4892"	
0090,"	E",	"10/29/97"	,"07:33"		,0000000425,	0.00E+00	0.00e+000,	444,"T	CI4892"	
0095,"	X",	"10/29/97"	,"15:50"	497	,0000000425,	1.81E-04	4.60e-005,	444,"	CI4892"	
0098,"	E",	"10/30/97"	,"08:26"		,0000000425,	0.00E+00	0.00e+000,	444,"T	CI4892"	
0102,"	X",	"10/30/97"	,"15:54"	458	,0000000425,	1.86E-04	1.23e-004,	444,"	CI4892"	
0104,"	E",	"10/31/97"	,"07:31"		,0000000425,	0.00E+00	0.00e+000,	444,"	CI4885"	
0111,"	X",	"10/31/97"	,"15:50"	509	,0000000425,	2.15E-04	8.26e-005,	444,"	CI4885"	
0115,"	E",	"11/03/97"	,"07:32"		,0000000425,	0.00E+00	0.00e+000,	444,"T	CI4723"	
0116,"	X",	"11/03/97"	,"15:52"	500	,0000000425,	1.58E-04	8.38e-005,	444,"	CI4723"	
0130,"	E",	"11/05/97"	,"07:30"		,0000000425,	0.00E+00	0.00e+000,	444,"T	CI4723"	
0131,"	X",	"11/05/97"	,"15:52"	502	,0000000425,	1.79E-04	5.42e-005,	444,"	CI4723"	
0133,"	E",	"11/06/97"	,"07:31"		,0000000425,	0.00E+00	0.00e+000,	444,"T	CI4723"	
0142,"	X",	"11/06/97"	,"15:55"	504	,0000000425,	1.79E-04	7.89e-005,	444,"	CI4723"	
0144,"	E",	"11/07/97"	,"07:26"		,0000000425,	0.00E+00	0.00e+000,	444,"T	CI4855"	
0148,"	X",	"11/07/97"	,"15:47"	501	,0000000425,	1.96E-04	8.87e-005,	444,"	CI4855"	
0152,"	E",	"11/10/97"	,"07:26"		,0000000425,	0.00E+00	0.00e+000,	444,"T	CI4885"	No Exit
	X",	"11/10/97"	,"15:47"	493	,0000000425,	1.39E-04	4.86e-005,	444,"	CI4885"	Estimate
0156,"	E",	"11/11/97"	,"07:34"		,0000000425,	0.00E+00	0.00e+000,	444,"	CI4885"	
0157,"	X",	"11/11/97"	,"15:47"	493	,0000000425,	1.39E-04	4.86e-005,	444,"	CI4885"	
0162,"	E",	"11/12/97"	,"07:30"	0	,0000000425,	0.00E+00	0.00e+000,	444,"T	CI4885"	
0167,"	X",	"11/12/97"	,"15:49"	499	,0000000425,	1.71E-04	4.86e-005,	444,"	CI4885"	
0173,"	E",	"11/13/97"	,"07:29"		,0000000425,	0.00E+00	0.00e+000,	444,"T	CI4723"	
0176,"	X",	"11/13/97"	,"16:11"	522	,0000000425,	2.25E-04	5.42e-005,	444,"	CI4723"	
0183,"	E",	"11/14/97"	,"12:26"		,0000000425,	0.00E+00	0.00e+000,	444,"T	CI4855"	
0184,"	X",	"11/14/97"	,"15:04"	158	,0000000425,	3.78E-05	3.94e-005,	444,"	CI4855"	
0207,"	E",	"11/24/97"	,"07:36"		,0000000425,	0.00E+00	0.00e+000,	444,"T	CI4885"	
0208,"	X",	"11/24/97"	,"15:45"	489	,0000000425,	1.66E-04	4.86e-005,	444,"	CI4885"	
0213,"	E",	"11/25/97"	,"07:29"		,0000000425,	0.00E+00	0.00e+000,	444,"T	CI4885"	
0215,"	X",	"11/25/97"	,"15:46"	497	,0000000425,	2.06E-04	4.37e-005,	444,"	CI4885"	
0220,"	E",	"12/01/97"	,"07:30"		,0000000425,	0.00E+00	0.00e+000,	444,"T	CI4723"	
0227,"	X",	"12/01/97"	,"15:51"	501	,0000000425,	2.28E-04	1.04e-004,	444,"	CI4723"	
0235,"	E",	"12/03/97"	,"07:25"		,0000000425,	0.00E+00	0.00e+000,	444,"T	CI4723"	
0241,"	X",	"12/03/97"	,"15:50"	505	,0000000425,	1.69E-04	4.93e-005,	444,"	CI4723"	
0244,"	E",	"12/04/97"	,"07:29"		,0000000425,	0.00E+00	0.00e+000,	444,"T	CI4892"	
0250,"	X",	"12/04/97"	,"15:48"	499	,0000000425,	1.81E-04	4.60e-005,	444,"	CI4892"	
0253,"	E",	"12/05/97"	,"07:32"		,0000000425,	0.00E+00	0.00e+000,	444,"T	CI4892"	
0258,"	X",	"12/05/97",	"15:43"	491	,0000000425,	1.89E-04	,5.11e-005,	444	CI4892	
0266,"	E",	"12/08/97",	"07:50"		,0000000425,	0.00E+00	,0.00e+000,	444	CI4885	
0268,"	X",	"12/08/97",	"15:45"	475	,0000000425,	1.75E-04	,8.75e-005,	444	CI4885	
0272,"	E",	"12/09/97",	"07:28"		,0000000425,	0.00E+00	,0.00e+000,	444	CI4892	
0277,"	X",	"12/09/97",	"15:50"	502	,0000000425,	1.48E-04	,8.18e-005,	444	CI4892	
0279,"	E",	"12/10/97",	"07:25"		,0000000425,	0.00E+00	,0.00e+000,	444	CI4723	

0284,"	X",	"12/10/97",	"15:52"	507	,0000000425,	1.72E-04	,4.93e-005,	444	CI4723	
0287,"	E",	"12/11/97",	"07:25"		,0000000425,	0.00E+00	,0.00e+000,	444	CI4892	
0293,"	X",	"12/11/97",	"15:50"	505	,0000000425,	1.80E-04	,4.60e-005,	444	CI4892	
0298,"	E",	"12/12/97",	"07:29"		,0000000425,	0.00E+00	,0.00e+000,	444	CI4723	
0301,"	X",	"12/12/97",	"13:41"	432	,0000000425,	1.26E-04	,9.37e-005,	444	CI4723	
0307,"	E",	"12/15/97",	"07:30"		,0000000425,	0.00E+00	,0.00e+000,	444	CI4892	
0309,"	X",	"12/15/97",	"15:48"	498	,0000000425,	2.23E-04	,5.11e-005,	444	CI4892	
0315,"	E",	"12/16/97",	"07:30"		,0000000425,	0.00E+00	,0.00e+000,	444	CI4885	
0316,"	X",	"12/16/97",	"15:51"	501	,0000000425,	1.99E-04	,8.26e-005,	444	CI4885	
0342,"	E",	"12/22/97",	"11:11"		,0000000425,	0.00E+00	,0.00e+000,	444	CI5023	
0343,"	X",	"12/22/97",	"15:51"	280	,0000000425,	1.23E-04	,8.29e-005,	444	CI5023	
0346,"	E",	"12/23/97",	"07:31"		,0000000425,	0.00E+00	,0.00e+000,	444	CI4723	
0349,"	X",	"12/23/97",	"13:50"	439	,0000000425,	1.36E-04	,3.45e-005,	444	CI4723	
0352,"	E",	"12/26/97",	"07:34"		,0000000425,	0.00E+00	,0.00e+000,	333	CI4885	
0353,"	X",	"12/26/97",	"15:43"	489	,0000000425,	1.89E-04	,8.26e-005,	333	CI4885	
0356,"	E",	"12/29/97",	"07:32"		,0000000425,	0.00E+00	,0.00e+000,	444	CI4885	
0362,"	X",	"12/29/97",	"15:47"	495	,0000000425,	1.75E-04	,4.86e-005,	444	CI4885	
0369,"	E",	"12/30/97",	"07:27"		,0000000425,	0.00E+00	,0.00e+000,	444	CI4723	
0370,"	X",	"12/30/97",	"15:48"	501	,0000000425,	1.40E-04	,1.08e-004,	444	CI4723	
0376,"	E",	"12/31/97",	"07:30"		,0000000425,	0.00E+00	,0.00e+000,	444	CI4885	
0380,"	X",	"12/31/97",	"15:44"	494	,0000000425,	1.41E-04	,9.23e-005,	444	CI4885	
0387,"	E",	"01/02/98",	"07:30"		,0000000425,	0.00E+00	,0.00e+000,	444	CI4892	
0389,"	X",	"01/02/98",	"15:46"	496	,0000000425,	1.67E-04	,4.60e-005,	444	CI4892	
0394,"	E",	"01/05/98",	"07:28"		,0000000425,	0.00E+00	,0.00e+000,	444	CI4892	
0397,"	X",	"01/05/98",	"15:47"	499	,0000000425,	1.71E-04	,5.62e-005,	444	CI4892	
0405,"	E",	"01/06/98",	"07:29"		,0000000425,	0.00E+00	,0.00e+000,	444	CI4885	
0407,"	X",	"01/06/98",	"17:27"	598	,0000000425,	2.22E-04	,4.86e-005,	444	CI4885	
0409,"	E",	"01/07/98",	"07:40"		,0000000425,	0.00E+00	,0.00e+000,	444	CI4885	
0415,"	X",	"01/07/98",	"15:45"	485	,0000000425,	1.96E-04	,9.23e-005,	444	CI4885	
0420,"	E",	"01/08/98",	"07:31"		,0000000425,	0.00E+00	,0.00e+000,	444	CI4723	
0424,"	X",	"01/08/98",	"15:44"	493	,0000000425,	1.72E-04	,4.93e-005,	444	CI4723	
0431,"	E",	"01/09/98",	"07:26"		,0000000425,	0.00E+00	,0.00e+000,	444	CI4723	
0433,"	X",	"01/09/98",	"15:50"	504	,0000000425,	1.72E-04	,8.38e-005,	444	CI4723	
0440,"	E",	"01/12/98",	"07:29"		,0000000425,	0.00E+00	,0.00e+000,	444	CI4885	
0442,"	X",	"01/12/98",	"15:44"	495	,0000000425,	1.89E-04	,8.75e-005,	444	CI4885	
0449,"	E",	"01/13/98",	"07:26"		,0000000425,	0.00E+00	,0.00e+000,	444	CI4723	
0452,"	X",	"01/13/98",	"15:51"	505	,0000000425,	1.71E-04	,4.93e-005,	444	CI4723	
0454,"	E",	"01/14/98",	"07:28"		,0000000425,	0.00E+00	,0.00e+000,	444	CI4723	
0458,"	X",	"01/14/98",	"15:48"	500	,0000000425,	1.30E-04	,4.44e-005,	444	CI4723	
0463,"	E",	"01/15/98",	"07:29"		,0000000425,	0.00E+00	,0.00e+000,	444	CI4723	
0465,"	X",	"01/15/98",	"15:36"	487	,0000000425,	2.35E-04	,4.93e-005,	444	CI4723	
0467,"	E",	"01/16/98",	"07:28"		,0000000425,	0.00E+00	,0.00e+000,	444	CI4723	
0471,"	X",	"01/16/98",	"18:13"	645	,0000000425,	2.31E-04	,8.38e-005,	444	CI4723	
0478,"	E",	"01/21/98",	"07:29"		,0000000425,	0.00E+00	,0.00e+000,	444	CI4723	
				378. hrs		8.18 mrem				

Employee ID# 458

Record #	Type	Date	Time	Elapse Time	Employee #	Dose	Peak Dose Rate	RWP	Serial #	
0029,"	E",	"10/22/97"	,"06:55"		,0000000458,	0.00E+00	0.00e+000,	444,"T	CI4774"	Training
0030,"	X",	"10/22/97"	,"06:56"	1	,0000000458,	0.00E+00	0.00e+000,	444,"	CI4774"	Training
0031,"	X",	"10/22/97"	,"06:57"	1	,0000000458,	2.60E-06	0.00e+000,	444,"T	CI4774"	Training
0033,"	E",	"10/22/97"	,"06:59"		,0000000458,	0.00E+00	0.00e+000,	444,"T	CI4774"	
0038,"	X",	"10/22/97"	,"16:46"	646	,0000000458,	1.52E-04	4.59e-005,	444,"	CI4774"	
0042,"	E",	"10/23/97"	,"06:30"		,0000000458,	0.00E+00	0.00e+000,	444,"T	CI4892"	
0044,"	X",	"10/23/97"	,"16:50"	620	,0000000458,	1.78E-04	8.18e-005,	444,"	CI4892"	
0051,"	E",	"10/27/97"	,"07:32"		,0000000458,	0.00E+00	0.00e+000,	444,"T	CI4892"	
0055,"	E",	"10/27/97"	,"07:37"		,0000000458,	0.00E+00	0.00e+000,	111,"	CI4774"	
0056,"	X",	"10/27/97"	,"07:38"	1	,0000000458,	1.30E-06	0.00e+000,	111,"	CI4774"	
0058,"	X",	"10/27/97"	,"07:50"	12	,0000000458,	1.30E-06	0.00e+000,	111,"	CI4774"	
0059,"	X",	"10/27/97"	,"07:51"	1	,0000000458,	1.30E-06	0.00e+000,	111,"	CI4774"	
0060,"	X",	"10/27/97"	,"10:03"	132	,0000000458,	0.00E+00	0.00e+000,	111,"T	CI4774"	
0061,"	X",	"10/27/97"	,"10:07"	4	,0000000458,	1.30E-06	0.00e+000,	111,"	CI4774"	
0075,"	X",	"10/27/97"	,"15:50"	343	,0000000458,	1.75E-04	8.69e-005,	444,"	CI4892"	
0081,"	E",	"10/28/97"	,"07:33"		,0000000458,	0.00E+00	0.00e+000,	444,"T	CI4855"	
0083,"	X",	"10/28/97"	,"15:55"	502	,0000000458,	1.96E-04	7.89e-005,	444,"	CI4855"	
0086,"	E",	"10/29/97"	,"07:31"		,0000000458,	0.00E+00	0.00e+000,	444,"T	CI4891"	
0092,"	E",	"10/29/97"	,"10:01"		,0000000458,	0.00E+00	0.00e+000,	444,"T	CI4774"	
0093,"	X",	"10/29/97"	,"10:03"	2	,0000000458,	**6.58E+02**	**4.16e+004,**	444,"	CI4891"	Statistical Spike
0096,"	X",	"10/29/97"	,"15:51"	348	,0000000458,	9.49E-05	4.13e-005,	444,"	CI4774"	
0099,"	X",	"10/30/97"	,"08:30"		,0000000458,	1.30E-06	0.00e+000,	444,"T	CI4774"	
0100,"	X",	"10/30/97"	,"08:31"	1	,0000000458,	1.30E-06	0.00e+000,	444,"T	CI4774"	
0109,"	E",	"10/31/97"	,"10:14"		,0000000458,	0.00E+00	0.00e+000,	444,"T	CI4855"	
0110,"	X",	"10/31/97"	,"15:50"	336	,0000000458,	1.12E-04	5.42e-005,	444,"	CI4855"	
0113,"	E",	"11/03/97"	,"07:30"		,0000000458,	0.00E+00	0.00e+000,	444,"T	CI4892"	
0117,"	X",	"11/03/97"	,"15:53"	503	,0000000458,	2.51E-04	8.18e-005,	444,"	CI4892"	
0119,"	E",	"11/04/97"	,"07:19"		,0000000458,	0.00E+00	0.00e+000,	333,"T	CI4892"	
0122,"	X",	"11/04/97"	,"07:33"	14	,0000000458,	4.35E-06	0.00e+000,	333,"	CI4892"	
0124,"	E",	"11/04/97"	,"07:33"		,0000000458,	0.00E+00	0.00e+000,	444,"T	CI4892"	
0126,"	X",	"11/04/97"	,"15:49"	496	,0000000458,	1.70E-04	4.60e-005,	444,"	CI4892"	
0128,"	E",	"11/05/97"	,"07:29"		,0000000458,	0.00E+00	0.00e+000,	444,"T	CI4892"	
0135,"	E",	"11/06/97"	,"08:00"		,0000000458,	0.00E+00	0.00e+000,	444,"T	CI4855"	
0136,"	X",	"11/06/97"	,"10:23"	143	,0000000458,	4.80E-04	5.62e-005,	444,"	CI4892"	
0138,"	E",	"11/06/97"	,"10:24"		,0000000458,	0.00E+00	0.00e+000,	444,"T	CI4885"	
0139,"	X",	"11/06/97"	,"10:25"	1	,0000000458,	0.00E+00	0.00e+000,	444,"	CI4885"	
0140,"	",	"11/06/97"	,"15:54"		,0000000458,	1.58E-04	5.42e-005,	0,"	CI4855"	
0141,"	X",	"11/06/97"	,"15:54"	329	,0000000458,	1.58E-04	5.42e-005,	444,"	CI4855"	
0146,"	E",	"11/07/97"	,"07:27"		,0000000458,	0.00E+00	0.00e+000,	444,"T	CI4723"	
0147,"	X",	"11/07/97"	,"15:47"	500	,0000000458,	1.50E-04	5.42e-005,	444,"	CI4723"	
0150,"	E",	"11/10/97"	,"07:25"		,0000000458,	0.00E+00	0.00e+000,	444,"T	CI4855"	
0160,"	E",	"11/12/97"	,"07:30"		,0000000458,	0.00E+00	0.00e+000,	444,"T	CI4892"	No Exit
	X",	"11/12/97",	"15:49"	499	,0000000458,	1.70E-04	,4.37e-005,	444	CI4885	Estimate
0169,"	E",	"11/13/97"	,"07:28"		,0000000458,	0.00E+00	0.00e+000,	444,"T	CI4885"	
0174,"	X",	"11/13/97"	,"15:50"	502	,0000000458,	1.67E-04	4.86e-005,	444,"	CI4885"	
0180,"	E",	"11/14/97"	,"07:30"		,0000000458,	0.00E+00	0.00e+000,	444,"T	CI4885"	
0181,"	X",	"11/14/97"	,"12:24"	294	,0000000458,	8.68E-05	3.94e-005,	444,"T	CI4855"	
0185,"	X",	"11/14/97"	,"15:45"	201	,0000000458,	1.66E-04	4.37e-005,	444,"	CI4885"	
0190,"	E",	"11/17/97"	,"07:31"		,0000000458,	0.00E+00	0.00e+000,	444,"T	CI4885"	
0191,"	X",	"11/17/97"	,"15:47"	496	,0000000458,	1.81E-04	5.35e-005,	444,"	CI4885"	
0194,"	E",	"11/18/97"	,"07:29"		,0000000458,	0.00E+00	0.00e+000,	444,"T	CI4723"	
0197,"	X",	"11/18/97"	,"15:50"	501	,0000000458,	1.48E-04	3.94e-005,	444,"	CI4723"	
0202,"	E",	"11/19/97"	,"07:31"		,0000000458,	0.00E+00	0.00e+000,	444,"T	CI4723"	
0204,"	E",	"11/21/97"	,"11:30"		,0000000458,	0.00E+00	0.00e+000,	444,"T	CI4885"	
0205,"	X",	"11/21/97"	,"11:31"	1	,0000000458,	1.38E-06	0.00e+000,	444,"	CI4885"	
0209,"	X",	"11/24/97"	,"15:46"	255	,0000000458,	2.10E-04	5.42e-005,	444,"	CI4723"	
0224,"	E",	"12/01/97"	,"07:32"		,0000000458,	0.00E+00	0.00e+000,	444,"T	CI4885"	
0226,"	X",	"12/01/97"	,"15:51"	499	,0000000458,	1.78E-04	5.35e-005,	444,"	CI4885"	
0231,"	E",	"12/02/97"	,"12:35"		,0000000458,	0.00E+00	0.00e+000,	444,"T	CI4885"	
0232,"	X",	"12/02/97"	,"15:44"	189	,0000000458,	8.83E-05	8.26e-005,	444,"	CI4885"	
0237,"	E",	"12/03/97"	,"07:26"		,0000000458,	0.00E+00	0.00e+000,	444,"T	CI4892"	
0242,"	X",	"12/03/97"	,"15:50"	504	,0000000458,	1.73E-04	4.60e-005,	444,"	CI4892"	
0246,"	E",	"12/04/97"	,"07:30"		,0000000458,	0.00E+00	0.00e+000,	444,"T	CI4723"	
0249,"	X",	"12/04/97"	,"15:47"	497	,0000000458,	1.39E-04	3.94e-005,	444,"	CI4723"	

0257,"	E",	"12/05/97"	,"07:32"		,0000000458,	0.00E+00	0.00e+000,	444,"T	CI4885"	
0259,"	X",	"12/05/97",	"15:44"	492	,0000000458,	1.57E-04	,7.78e-005,	444	CI4885	
0264,"	E",	"12/08/97",	"07:29"		,0000000458,	0.00E+00	,0.00e+000,	444	CI4892	
0267,"	X",	"12/08/97",	"15:44"	495	,0000000458,	1.64E-04	,1.02e-004,	444	CI4892	
0274,"	E",	"12/09/97",	"07:29"		,0000000458,	0.00E+00	,0.00e+000,	444	CI4885	
0275,"	X",	"12/09/97",	"15:49"	500	,0000000458,	1.70E-04	,4.37e-005,	444	CI4885	
0281,"	E",	"12/10/97",	"07:26"		,0000000458,	0.00E+00	,0.00e+000,	444	CI4892	No Exit
	X",	"12/10/97",	"15:49"	503	,0000000458,	1.70E-04	,4.37e-005,	444	CI4885	Estimate
0291,"	E",	"12/11/97",	"07:27"		,0000000458,	0.00E+00	,0.00e+000,	444	CI4723	
0292,"	X",	"12/11/97",	"15:50"	503	,0000000458,	1.61E-04	,4.44e-005,	444	CI4723	
0300,"	E",	"12/12/97",	"07:30"		,0000000458,	0.00E+00	,0.00e+000,	444	CI4885	
0303,"	X",	"12/12/97",	"15:43"	493	,0000000458,	1.96E-04	,9.72e-005,	444	CI4885	
0305,"	E",	"12/15/97",	"07:29"		,0000000458,	0.00E+00	,0.00e+000,	444	CI4855	
0308,"	X",	"12/15/97",	"15:48"	499	,0000000458,	2.20E-04	,8.87e-005,	444	CI4855	
0313,"	E",	"12/16/97",	"07:29"		,0000000458,	0.00E+00	,0.00e+000,	444	CI4892	
0317,"	X",	"12/16/97",	"15:51"	502	,0000000458,	1.64E-04	,4.60e-005,	444	CI4892	
0322,"	E",	"12/17/97",	"07:40"		,0000000458,	0.00E+00	,0.00e+000,	444	CI4723	
0323,"	X",	"12/17/97",	"15:41"	481	,0000000458,	1.25E-04	,3.94e-005,	444	CI4723	
0326,"	E",	"12/18/97",	"07:29"		,0000000458,	0.00E+00	,0.00e+000,	444	CI4723	
0330,"	X",	"12/18/97",	"15:43"	494	,0000000458,	1.85E-04	,5.42e-005,	444	CI4723	
0336,"	E",	"12/19/97",	"07:29"		,0000000458,	0.00E+00	,0.00e+000,	444	CI4892	
0337,"	X",	"12/19/97",	"15:44"	495	,0000000458,	1.71E-04	,4.60e-005,	444	CI4892	
0340,"	E",	"12/22/97",	"07:29"		,0000000458,	0.00E+00	,0.00e+000,	444	CI4723	
0344,"	X",	"12/22/97",	"15:52"	503	,0000000458,	1.83E-04	,4.93e-005,	444	CI4723	
0348,"	E",	"12/23/97",	"08:01"		,0000000458,	0.00E+00	,0.00e+000,	444	CI4885	
0350,"	X",	"12/23/97",	"15:46"	465	,0000000458,	1.79E-04	,5.35e-005,	444	CI4885	
0358,"	E",	"12/29/97",	"07:33"		,0000000458,	0.00E+00	,0.00e+000,	444	CI4723	
0361,"	X",	"12/29/97",	"15:47"	494	,0000000458,	1.74E-04	,7.89e-005,	444	CI4723	
0367,"	E",	"12/30/97",	"07:26"		,0000000458,	0.00E+00	,0.00e+000,	444	CI4885	
0371,"	X",	"12/30/97",	"15:48"	502	,0000000458,	1.68E-04	,4.37e-005,	444	CI4885	
0378,"	E",	"12/31/97",	"07:31"		,0000000458,	0.00E+00	,0.00e+000,	444	CI4723	
0379,"	X",	"12/31/97",	"15:44"	493	,0000000458,	1.68E-04	,4.44e-005,	444	CI4723	
0385,"	E",	"01/02/98",	"07:29"		,0000000458,	0.00E+00	,0.00e+000,	444	CI4885	
0388,"	X",	"01/02/98",	"13:53"	444	,0000000458,	1.37E-04	,5.35e-005,	444	CI4885	
0401,"	E",	"01/06/98",	"07:28"		,0000000458,	0.00E+00	,0.00e+000,	444	CI4892	
0406,"	X",	"01/06/98",	"15:39"	491	,0000000458,	1.55E-04	,4.09e-005,	444	CI4892	
0413,"	E",	"01/07/98",	"07:41"		,0000000458,	0.00E+00	,0.00e+000,	444	CI4892	
0414,"	X",	"01/07/98",	"15:44"	483	,0000000458,	1.73E-04	,8.69e-005,	444	CI4892	
0422,"	E",	"01/08/98",	"07:32"		,0000000458,	0.00E+00	,0.00e+000,	444	CI4885	
0423,"	X",	"01/08/98",	"15:43"	491	,0000000458,	1.78E-04	,4.37e-005,	444	CI4885	
0429,"	E",	"01/09/98",	"07:26"		,0000000458,	0.00E+00	,0.00e+000,	444	CI4885	
0432,"	X",	"01/09/98",	"15:50"	504	,0000000458,	1.37E-04	,4.86e-005,	444	CI4885	
0438,"	E",	"01/12/98",	"07:29"		,0000000458,	0.00E+00	,0.00e+000,	444	CI4892	
0441,"	X",	"01/12/98",	"15:43"	494	,0000000458,	1.70E-04	,1.07e-004,	444	CI4892	
0447,"	E",	"01/13/98",	"07:25"		,0000000458,	0.00E+00	,0.00e+000,	444	CI4885	
0450,"	X",	"01/13/98",	"15:50"	505	,0000000458,	1.70E-04	,3.89e-005,	444	CI4885	
0457,"	X",	"01/14/98",	"07:30"		,0000000458,	0.00E+00	,0.00e+000,	444	CI4885	
				345. hrs		7.87 mrem				

Employee ID# 498

Record #	Type	Date	Time	Elapse Time	Employee #	Dose	Peak Dose Rate	RWP	Serial #
0396,"	E",	"01/05/98",	"07:29"		,0000000498,	0.00E+00	,0.00e+000,	444	CI4885
0398,"	X",	"01/05/98",	"15:48"	499	,0000000498,	1.31E-04	,3.40e-005,	444	CI4885
				8.32 hrs		.13 mrem			

Attachment E

TLD Reports

C

APPENDIX C

COVENANT RESTRICTING USE OF PROPERTY

DRAFT

COVENANT RESTRICTING USE OF PROPERTY

The J. R. Simplot Company ("Covenanter"), being the owner of real property located in Power County, Idaho described in Exhibit A attached hereto and incorporated by this reference, (the "Property"), hereby adopts the covenants, conditions and restrictions set forth herein which shall apply to and run with the Property.

1. Background, Purpose. The Property is located at or near the site of a fertilizer manufacturing facility referred to as the J. R. Simplot Don Plant in Power County, Idaho (the "Facility") that Covenanter has been operating since 1944. The covenants, conditions and restrictions set forth herein are necessary to ensure the development of the Property in a manner consistent with the current use and character of the Facility.

2. Covenant Restricting Use. The Property shall not be used or developed for any residential purposes.

Any future office buildings on the Property must be constructed using the radon controlling methods specified by the appropriate authorized regulatory agency.

Use of groundwater for human consumption is prohibited, unless sampling and analysis yield results within applicable drinking water standards.

3. Covenant to Run With the Land in Perpetuity. The restrictions contained in this Covenant shall run with the land in perpetuity, and shall bind all persons obtaining or succeeding to an interest in the Property after the date hereof.

4. Application. All real estate lots, parcels or portions thereof located within or on the Property, and any conveyance or transfer covering or describing any part thereof, shall be subject to the covenants, conditions and restrictions contained herein. By acceptance of such conveyance or transfer, each transferee or grantee and each of his heirs, successors, transferees or assigns agree with Covenanter and each other to be bound by the covenants, conditions and restriction contained herein.

5. Partial Resale, Lease or Sublease. The sale, subdivision, leasing and subleasing of a portion of the Property shall be prohibited unless each such portion resulting from such sale, subdivision, leasing or subleasing will meet all of the requirements contained herein and contained in any applicable, valid governmental ordinance and regulations.

6. Enforcement. Covenanter and any person, corporation or other entity who hereafter asserts or claims any right, title, claim or interest in and to the Property, whether as successor in title or otherwise and whether voluntarily or by operation of law ("Grantor"), and any person, corporation or other entity claiming by, through or under Covenanter or Grantee, or their heirs, assigns or successors, or any of them severally, shall have the right to enforce the restrictions contained in this Covenant and to proceed at law or in equity to compel compliance

with or prevent the violation or breach of the terms hereof. The prevailing party in any action to enforce any provision of this Covenant shall be entitled to recover all costs of such action, including reasonable attorney fees.

7. Miscellaneous. The determination that any provision of this Covenant is invalid shall not affect any other provision of this Covenant and the other provisions of this Covenant shall remain in full force and effect. No waiver of the breach or any provision of this Covenant shall constitute a waiver of a subsequent breach of the same provision or of any other provision. No right of action shall accrue for or on account of the failure of any person to exercise any right created by this Covenant nor for imposing any provision, condition, restriction or covenant which may be unenforceable.

Dated this_____ day of _____ 2002.

J.R. SIMPLOT COMPANY

By:_____
Its:_____

STATE OF IDAHO)
) ss.
COUNTY OF POWER_____)

I certify that I know or have satisfactory evidence that _____ is the person who appeared before me, that said person acknowledged that he signed this instrument, and that said person on oath stated that he was authorized to execute the instrument as the _____ _____ of the J. R. Simplot Company, and that the instrument was the free and voluntary act of said company.

Given under my hand and official seal this ___ day of _____, 2002.

_____

NOTARY PUBLIC in and for the State of Idaho, residing at

_____

My appointment expires_____

DRAFT

DEED NOTICE

Reference No.:	Not Applicable
Owner:	J.R. Simplot Company 999 Main Street Boise, Idaho 83702
Legal Description:	See Attached legal description
Assessor's Tax Parcel Nos.	

Notice to is hereby provided that the above-reference property is located within the Eastern Michaud Flats ("EMF") Superfund Site (the "Site"), and is subject to the following requirements and actions:

a. A Consent Decree entered on May 9, 2002, in the matter of the United States v. FMC Corporation and J.R. Simplot Company, Civ. No. 99-296-E-BLW (E. D. Idaho).

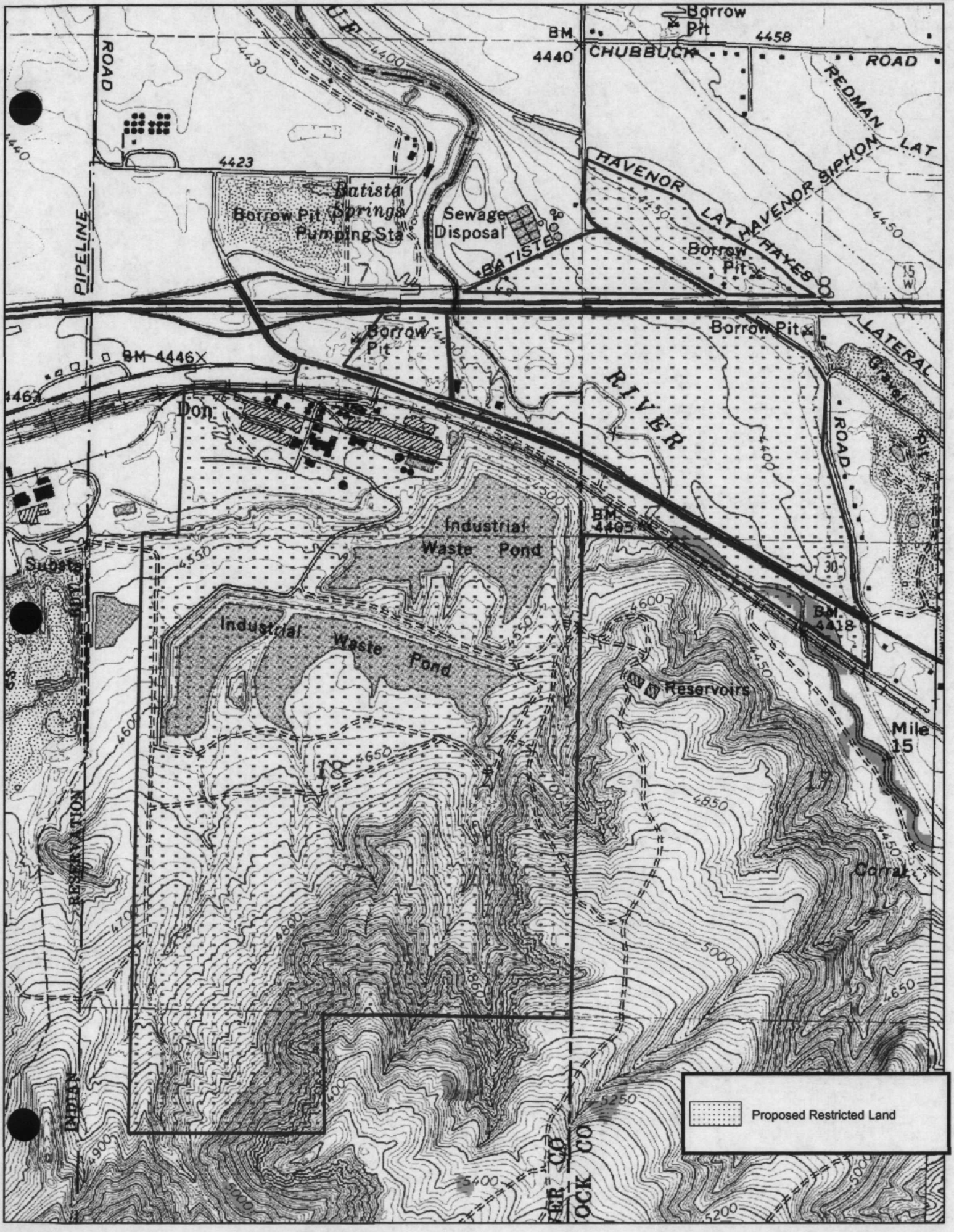
b. A cleanup remedy selected by the U.S. Environmental Protection Agency in a Record of Decision ("ROD") dated June 8, 1998.

c. Owner's implementation of the remedy pursuant to the Consent Decree.

DATED the ___ day of _____ 200_.

OWNER:

By: _____


Borrow Pit
BM 4440
CHUBBUCK
4458
ROAD
REDMAN LAT
HAVENOR LAT
HAVENOR SIPHON
PIPELINE ROAD
4423
Batista Springs
Borrow Pit
Pumping Sta
Sewage Disposal
BATISTE
Borrow Pit
Borrow Pit
LATERAL
BM 4446
Don
RIVER
Gravel Pit
ROAD
Industrial Waste Pond
Industrial Waste Pond
BM 4405
Substa
Reservoirs
Mile 15
Corral
INDIAN RESERVATION
Proposed Restricted Land

DRAFT

COVENANT RESTRICTING USE OF PROPERTY

The J. R. Simplot Company ("Covenanter"), being the owner of real property located in Bannock County, Idaho described in Exhibit A attached hereto and incorporated by this reference, (the "Property"), hereby adopts the covenants, conditions and restrictions set forth herein which shall apply to and run with the Property.

1. Background, Purpose. The Property is located at or near the site of a fertilizer manufacturing facility referred to as the J. R. Simplot Don Plant in Bannock County, Idaho (the "Facility") that Covenanter has been operating since 1944. The covenants, conditions and restrictions set forth herein are necessary to ensure the development of the Property in a manner consistent with the current use and character of the Facility.

2. Covenant Restricting Use. The Property shall not be used or developed for any residential purposes.

Any future office buildings on the Property must be constructed using the radon controlling methods specified by the appropriate authorized regulatory agency.

Use of groundwater for human consumption is prohibited, unless sampling and analysis yield results within applicable drinking water standards.

3. Covenant to Run With the Land in Perpetuity. The restrictions contained in this Covenant shall run with the land in perpetuity, and shall bind all persons obtaining or succeeding to an interest in the Property after the date hereof.

4. Application. All real estate lots, parcels or portions thereof located within or on the Property, and any conveyance or transfer covering or describing any part thereof, shall be subject to the covenants, conditions and restrictions contained herein. By acceptance of such conveyance or transfer, each transferee or grantee and each of his heirs, successors, transferees or assigns agree with Covenanter and each other to be bound by the covenants, conditions and restriction contained herein.

5. Partial Resale, Lease or Sublease. The sale, subdivision, leasing and subleasing of a portion of the Property shall be prohibited unless each such portion resulting from such sale, subdivision, leasing or subleasing will meet all of the requirements contained herein and contained in any applicable, valid governmental ordinance and regulations.

6. Enforcement. Covenanter and any person, corporation or other entity who hereafter asserts or claims any right, title, claim or interest in and to the Property, whether as successor in title or otherwise and whether voluntarily or by operation of law ("Grantor"), and any person, corporation or other entity claiming by, through or under Covenanter or Grantee, or their heirs, assigns or successors, or any of them severally, shall have the right to enforce the restrictions contained in this Covenant and to proceed at law or in equity to compel compliance

with or prevent the violation or breach of the terms hereof. The prevailing party in any action to enforce any provision of this Covenant shall be entitled to recover all costs of such action, including reasonable attorney fees.

7. Miscellaneous. The determination that any provision of this Covenant is invalid shall not affect any other provision of this Covenant and the other provisions of this Covenant shall remain in full force and effect. No waiver of the breach or any provision of this Covenant shall constitute a waiver of a subsequent breach of the same provision or of any other provision. No right of action shall accrue for or on account of the failure of any person to exercise any right created by this Covenant nor for imposing any provision, condition, restriction or covenant which may be unenforceable.

Dated this_____ day of _____ 2002.

J.R. SIMPLOT COMPANY

By:_____
Its:_____

STATE OF IDAHO)
) ss.
COUNTY OF BANNOCK__)

I certify that I know or have satisfactory evidence that _____ is the person who appeared before me, that said person acknowledged that he signed this instrument, and that said person on oath stated that he was authorized to execute the instrument as the _____ _____ of the J. R. Simplot Company, and that the instrument was the free and voluntary act of said company.

Given under my hand and official seal this ___ day of _____, 2002.

_____

NOTARY PUBLIC in and for the State of Idaho, residing at

_____

My appointment expires_____